# GENERAL ALPHABETICAL INDEX


PAGES

Jan. 3 ..... 1 to 48
Jan. 10 ..... 49 to 96
Jan. 17 ..... 97 to 144
Jan. 24 ..... 145 to 192
Jan. 31 ..... 193 to 238
Feb. 7 ..... 239 to 286
Feb. 14 ..... 287 to 334
Feb. 21 ..... 335 to 382
Feb. 28 ..... 383 to 430
March 7 ..... 431 to 478
March 14 ..... 479 to 526
March 21 ..... 527 to 572
March 28 ..... 573 to 620
April 9 ..... 621 to 664
April 16 ..... 665 to 708
April 23 ..... 709 to 752
April 30 ..... 753 to 796
May 7 ..... 797 to 840
May 14 ..... 841 to 884
May 21 ..... 885 to 928
May 28 ..... 929 to 970
June 4 ..... 971 to 1012
June 11 ..... 1013 to 1056
June 18 ..... 1057 to 1100
June 25 ..... 1101 to 1144

A

Abrasives, Aluminous (P.) ..... 865
Absorbtion, gases (B. P.) ..... 320
Accelerators, Vulcanization: (See under Rubber)
Accelerated reactions in pulsating gas currents, Comment ..... 198, 242, 434
Accidents, acid, must stop ..... 740
Acetate of lime and methanol, increased production of ..... 915
Acetyl cellulose from bleached sulphite paper pulp (P.) ..... 735
Acetylene, production of metal hydrates and gas (P.) ..... 603
Acetylene and oxygen ..... 650
ACHESON, EDWARD G.:
——Biographical sketch ..... 974
——Electrochemical society honors, editorial comment ..... 842
ACID:
——Accidents must stop ..... 740
——Fatty (B. P.) ..... 367
——Cresylic, To apply for lower tariff on. 696
——Manufacture, Vitreosil in. Tyler.... 692
——Phosphates in 1923, Manufacture of 728
——Resistance of glasses, Marshall..... 217
——Resisting irons, Schenck ..... 678
——Sulphuric (B. P.) ..... 368
Activated carbon, manufacture of. Ray 947
Administration, editorial comment..... 146
Agitator (P.) ..... 556
AGRICULTURE:
——Department plans work for color laboratory ..... 467
——5,000 Research problems concern.... 226
AIR:
——Drying, methods of. Holden..... 801
——Exhaustion, Apparatus for (P.) .... 604
——Polution, city, by auto exhaust is menace ..... 611
——Process for treating (P.) ..... 462
——Slaking, Rhodes, Jones and Dougan 1066
Airline transportation of materials. Jorgensen ..... 932
Alabama to produce arsenic ..... 610
Albumen containers need not be marked. 1044
ALCOHOL:
——Absolute (P.) ..... 557
——Committee named ..... 783
——Denatured formula ..... 1044
——Ethylene as a source of. Davis.... 116
——INDUSTRIAL:
—— Co-operation on, editorial comment. 575
—— Federal restrictions cause action by industrial users ..... 607
—— Gain in production ..... 1089
—— Interests get into action on drastic restrictions ..... 558
—— Situation improved ..... 229
——Interests to produce potash and fertilizer ..... 792
——"Methanol" officially adopted for nomenclature of ..... 180, 808
——Market, see market conditions.
——Motor fuel, New denaturing formula for ..... 38
——Propyl, An interesting note on..... 365
——Production of, in Poland ..... 436
——Regulation, trade committee will pass on ..... 1042
——Trade slow ..... 744
Alien property bill revised ..... 276
Alkali industry, Production statistics of. 593
ALLOYS:
——(B. P.) ..... 129
——Action of sulphurous gases on nickle-chromium alloys ..... 976
——ALUMINUM:
—— Contraction and shrinkage of.... 17
—— Silicon, Thermal properties of. Edwards ..... 165
——Factors affecting contraction of.... 546
——Nickel (P.) ..... 415
——Silicon-manganese-iron (P.) ..... 994
——Steel, Rapid sorting, comment ..... 338
ALUMINUM:
——Abrasives (P.) ..... 865
——Alcoholate, Esters from. (P.) ..... 272
——Alloys:
—— Analysis of. Comment ..... 242
—— Contraction and shrinkage of.... 17
—— Silicon, Thermal properties of. Edwards ..... 165

ALUMINUM (Continued):
——Bronze:
—— As an engineering material ..... 863
—— Etching ..... 852
——Chloride, Manufacture of anhydrous (P.) ..... 603
——Compounds, Production of (F. P.).. 273
——Contraction and shrinkage of alloys.. 17
——For chemical construction. Blough... 686
——Hardening of duralumin ..... 79
——Increase in output for 1922..... 635
——Production ..... 986
——Solder ..... 776
——SULPHATE:
—— As a soil corrective ..... 887
—— Botanist finds new use for ..... 558
Aluminum and potassium compounds, Production of (P.) ..... 273
Alsace, Output of potash increased in 1923 ..... 695
American Association for Advancement of Science, holds annual meeting in Boston ..... 83
AMERICAN CERAMIC SOCIETY:
——Feldspar Colloquium planned by.... 87
——Plans program ..... 180
——Silver jubilee meeting ..... 394
——To hold jubilee in Pittsburgh..... 230
AMERICAN CHEMICAL SOCIETY:
——California section active..... 517
——Cleveland section hears Slosson..... 884
——Editorial comment ..... 885
——Franklin discusses ammonia ..... 651
——Gas and Fuel Section plans motor fuel symposium ..... 277
——Honors Pasteur ..... 85
——Illinois alumni to gather at New Haven ..... 611
——Insecticide and fungicide symposium. 895
——Intersectional meeting at Urbana draws large attendance ..... 872
——Invited to Washington..... 914
——Manning will lead motor fuel symposium ..... 831
——New cellulose division seeks support. 277
——NEW HAVEN MEETING:
—— Papers and speeches for..... 421
—— Tentative program arranged for spring meeting ..... 369
—— Plans announced ..... 606
—— Dinners at New Haven..... 421
—— Editorial comment ..... 665
—— Staff report ..... 666
——President will visit 32 sections..... 229
——Rochester section secures Svedberg for symposium on Physical Chemistry.. 88
——Southern California section discusses ceramics ..... 468
——Will collect literature on cellulose.. 134
American contracts, German chemical companies unable to fulfill ..... 652
AMERICAN ELECTROCHEMICAL SOCIETY:
——Discuss European situation ..... 377
——Fall meeting plans ..... 1131
——Honors E. G. Acheson ..... 842
——Meets May 3-5 ..... 741
——Spring meeting—staff report ..... 855
——Symposium on rarer metals ..... 897
AMERICAN ENGINEERING COUNCIL OF THE FEDERATED AMERICAN ENGINEERING SOCIETEIES:
——Honor Caetini ..... 132
——Reviews year's work ..... 133
——Meets in Cincinnati ..... 469
AMERICAN ENGINEERING STANDARDS COMMITTEE:
——Adopt new financing plan ..... 467
——Safety code for walkways urged.... 422
——To standardize scientific symbols.... 514
American exporters urged to retain trade of foreign markets ..... 917
AMERICAN FOUNDRYMEN'S ASSOCIATION:
——Program announced ..... 560
——Spring meeting ..... 859
American fuels. R. F. Bacon and W. A. Hamor ..... 731
American Gas Association convention fixed. 469
American industry, editorial comment .... 433
AMERICAN INSTITUTE OF CHEMICAL ENGINEERS:
——Final program June meeting..... 949
——June meeting to be held at Wilmington, Del. ..... 786
——To meet at Wilmington ..... 919
AMERICAN INSTITUTE OF CHEMISTRY:
——Aims and purposes of the. Crane.. 457
——Formed to champion chemist ..... 326
——Council meets ..... 420
——Holds first annual meeting..... 697
——Meets ..... 469
——New York chapter formed ..... 829
AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS:
——Fall plans for meeting ..... 1131
——Winter meeting of (Institute of Metals Div.) ..... 391
——To meet in February ..... 227
——Editorial comment ..... 574
——Labor shortage discussed by..... 84
American Iron and Steel Institute, Spring meeting ..... 872
——Fall meeting plans ..... 1130
American Leather Chemists Association will meet at White Sulphur Springs 276

American Metric Association marks progress at Boston meeting ..... 83
AMERICAN OIL CHEMISTS SOCIETY:
——To meet in Hot Springs .....869, 919
——Fourteenth annual convention..... 895
AMERICAN PULP & PAPER ASSOCIATION:
——See under Paper and Pulp.
——Work reviewed ..... 323
American Relief Association makes announcement ..... 609
American Smelting and Refining Co. wipes out deficit ..... 566
American Society of Mechanical Engineers to have museum ..... 466
——Announcement ..... 34
American Society for Steel Treating:
——Regional meeting at Chicago ..... 343
——Will publish data sheets ..... 269
American Sole and Belting Leather Tanners Inc. ..... 650
American Turpentine Co., complaint against ..... 182
American Zinc Institute holds busy meeting at St. Louis ..... 871
AMMONIA:
——As nitrocellulose solvent (P.)..... 125
——Franklin discusses ..... 651
——Losses in carbonization ..... 732
——Recovery (P.) ..... 648
——Synthesis of, from its elements (P.) 177
——Synthetic, by the Claude process... 398
AMMONIUM SULPHATE:
——(P.) ..... 33
——Advanced in a moderately active market ..... 566
Amorphous theory, Beilby's ..... 733
Anesthetic compound (P.) ..... 319
Anhydride, phthalic, Manufacture of anthraquinone and (P.) ..... 510
Anti-dimming preparations for glass surfaces. Kuhn ..... 762
ANTHRAQUINONE:
——Manufacture of, and phthalic anhydride (P.) ..... 510
——Oxy-derivatives (P.) ..... 735
ARGENTINA:
——Imports American printing ink..... 826
——Linseed exports ..... 923
Arghan—a new fiber ..... 991
Argonaut mine disaster. The chemical engineer's part in the rescue work at Dushak ..... 349
Aromatic nitro-amino compounds (P.)... 273
Arsenate, Federal Phosphorus Co. not to produce ..... 650
ARSENIC:
——Alabama to produce ..... 610
——Australia has surplus ..... 741
——Canada may be source ..... 275
——Investigation predicts shortage..... 179
——Manufacture of acid and compounds (P.) ..... 778
——Montana source to be developed..... 562
——Metallic, Production of (P.) ..... 32
——Organic compound (P.) ..... 647
——Production, Research work to aid in increasing ..... 653
——Report too optimistic ..... 226
——Selling short on. Editorial ..... 753
——Stays in lime light ..... 608
——Trichloride affects industrial workers 849
ASBESTOS:
——Mines, Canadian, being developed... 131
——Protected metal, How it was developed commercially. Young ..... 244
Ash fuel, Germany using ..... 1088
Aterite. Milliken ..... 684
Atmospheric pollution [pointed out by Chandler medalist] ..... 131
Atomic speculation, editorial comment... 433
Australia, has surplus arsenic ..... 741
Automobile production, Increase in..... 637

B

Badische Anilin and Soda Fabrik, French-Badische convention ratified..... 421
Bakelite phenol production soon available 784
BAKING INDUSTRY:
——Incidence of research on. Hendrick.. 715
——Editorial ..... 710
Banking, The commercial banker's function in business ..... 487
Barberry bush, Poison for, developed.... 134
BARREL HANDLING:
——The dollars and cents of. Potts.... 293
——How to save money by proper methods of. Potts ..... 345
——A problem in, and how it is solved. Potts ..... 404
Barrels, restoring steel ..... 1078
Barytes, Freight rates on, held unreasonable ..... 878
Battery electrolytes, impurities in ..... 1065
BAUXITE:
——In 1922 ..... 78
——Again mined in British Guiana..... 599
——Composition and properties of diaspore and gibbsite ..... 602
——Producers, Discriminating law hits.. 517
——Refractory bonded with bentonite (P.) 603
——Improving structure of, refractories (P.) ..... 1125

# GENERAL ALPHABETICAL INDEX


PAGES

Jan. 3 ..... 1 to 48
Jan. 10 ..... 49 to 96
Jan. 17 ..... 97 to 144
Jan. 24 ..... 145 to 192
Jan. 31 ..... 193 to 238
Feb. 7 ..... 239 to 286
Feb. 14 ..... 287 to 334
Feb. 21 ..... 335 to 382
Feb. 28 ..... 383 to 430
March 7 ..... 431 to 478
March 14 ..... 479 to 526
March 21 ..... 527 to 572
March 28 ..... 573 to 620
April 9 ..... 621 to 664
April 16 ..... 665 to 708
April 23 ..... 709 to 752
April 30 ..... 753 to 796
May 7 ..... 797 to 840
May 14 ..... 841 to 884
May 21 ..... 885 to 928
May 28 ..... 929 to 970
June 4 ..... 971 to 1012
June 11 ..... 1013 to 1056
June 18 ..... 1057 to 1100
June 25 ..... 1101 to 1144

A

Abrasives, Aluminous (P.) ..... 865
Absorbtion, gases (B. P.) ..... 320
Accelerators, Vulcanization: (See under Rubber)
Accelerated reactions in pulsating gas currents, Comment ..... 198, 242, 434
Accidents, acid, must stop ..... 740
Acetate of lime and methanol, increased production of ..... 915
Acetyl cellulose from bleached sulphite paper pulp (P.) ..... 735
Acetylene, production of metal hydrates and gas (P.) ..... 603
Acetylene and oxygen ..... 650
ACHESON, EDWARD G.:
——Biographical sketch ..... 974
——Electrochemical society honors, editorial comment ..... 842
ACID:
——Accidents must stop ..... 740
——Fatty (B. P.) ..... 367
——Cresylic, To apply for lower tariff on. 696
——Manufacture, Vitreosil in. Tyler.... 692
——Phosphates in 1923, Manufacture of 728
——Resistance of glasses, Marshall..... 217
——Resisting irons, Schenck ..... 678
——Sulphuric (B. P.) ..... 368
Activated carbon, manufacture of. Ray 947
Administration, editorial comment..... 146
Agitator (P.) ..... 556
AGRICULTURE:
——Department plans work for color laboratory ..... 467
——5,000 Research problems concern.... 226
AIR:
——Drying, methods of. Holden..... 801
——Exhaustion, Apparatus for (P.) .... 604
——Polution, city, by auto exhaust is menace ..... 611
——Process for treating (P.) ..... 462
——Slaking, Rhodes, Jones and Dougan 1066
Airline transportation of materials. Jorgensen ..... 932
Alabama to produce arsenic ..... 610
Albumen containers need not be marked. 1044
ALCOHOL:
——Absolute (P.) ..... 557
——Committee named ..... 783
——Denatured formula ..... 1044
——Ethylene as a source of. Davis.... 116
——INDUSTRIAL:
—— Co-operation on, editorial comment. 575
—— Federal restrictions cause action by industrial users ..... 607
—— Gain in production ..... 1089
—— Interests get into action on drastic restrictions ..... 558
—— Situation improved ..... 229
——Interests to produce potash and fertilizer ..... 792
——"Methanol" officially adopted for nomenclature of ..... 180, 808
——Market, see market conditions.
——Motor fuel, New denaturing formula for ..... 38
——Propyl, An interesting note on..... 365
——Production of, in Poland ..... 436
——Regulation, trade committee will pass on ..... 1042
——Trade slow ..... 744
Alien property bill revised ..... 276
Alkali industry, Production statistics of. 593
ALLOYS:
——(B. P.) ..... 129
——Action of sulphurous gases on nickle-chromium alloys ..... 976
——ALUMINUM:
—— Contraction and shrinkage of.... 17
—— Silicon, Thermal properties of. Edwards ..... 165
——Factors affecting contraction of.... 546
——Nickel (P.) ..... 415
——Silicon-manganese-iron (P.) ..... 994
——Steel, Rapid sorting, comment ..... 338
ALUMINUM:
——Abrasives (P.) ..... 865
——Alcoholate, Esters from. (P.) ..... 272
——Alloys:
—— Analysis of. Comment ..... 242
—— Contraction and shrinkage of.... 17
—— Silicon, Thermal properties of. Edwards ..... 165

ALUMINUM (Continued):
——Bronze:
—— As an engineering material ..... 863
—— Etching ..... 852
——Chloride, Manufacture of anhydrous (P.) ..... 603
——Compounds, Production of (F. P.).. 273
——Contraction and shrinkage of alloys.. 17
——For chemical construction. Blough... 686
——Hardening of duralumin ..... 79
——Increase in output for 1922..... 635
——Production ..... 986
——Solder ..... 776
——SULPHATE:
—— As a soil corrective ..... 887
—— Botanist finds new use for ..... 558
Aluminum and potassium compounds, Production of (P.) ..... 273
Alsace, Output of potash increased in 1923 ..... 695
American Association for Advancement of Science, holds annual meeting in Boston ..... 83
AMERICAN CERAMIC SOCIETY:
——Feldspar Colloquium planned by.... 87
——Plans program ..... 180
——Silver jubilee meeting ..... 394
——To hold jubilee in Pittsburgh..... 230
AMERICAN CHEMICAL SOCIETY:
——California section active..... 517
——Cleveland section hears Slosson..... 884
——Editorial comment ..... 885
——Franklin discusses ammonia ..... 651
——Gas and Fuel Section plans motor fuel symposium ..... 277
——Honors Pasteur ..... 85
——Illinois alumni to gather at New Haven ..... 611
——Insecticide and fungicide symposium. 895
——Intersectional meeting at Urbana draws large attendance ..... 872
——Invited to Washington..... 914
——Manning will lead motor fuel symposium ..... 831
——New cellulose division seeks support. 277
——NEW HAVEN MEETING:
—— Papers and speeches for..... 421
—— Tentative program arranged for spring meeting ..... 369
—— Plans announced ..... 606
—— Dinners at New Haven..... 421
—— Editorial comment ..... 665
—— Staff report ..... 666
——President will visit 32 sections..... 229
——Rochester section secures Svedberg for symposium on Physical Chemistry.. 88
——Southern California section discusses ceramics ..... 468
——Will collect literature on cellulose.. 134
American contracts, German chemical companies unable to fulfill ..... 652
AMERICAN ELECTROCHEMICAL SOCIETY:
——Discuss European situation ..... 377
——Fall meeting plans ..... 1131
——Honors E. G. Acheson ..... 842
——Meets May 3-5 ..... 741
——Spring meeting—staff report ..... 855
——Symposium on rarer metals ..... 897
AMERICAN ENGINEERING COUNCIL OF THE FEDERATED AMERICAN ENGINEERING SOCIETEIES:
——Honor Caetini ..... 132
——Reviews year's work ..... 133
——Meets in Cincinnati ..... 469
AMERICAN ENGINEERING STANDARDS COMMITTEE:
——Adopt new financing plan ..... 467
——Safety code for walkways urged.... 422
——To standardize scientific symbols.... 514
American exporters urged to retain trade of foreign markets ..... 917
AMERICAN FOUNDRYMEN'S ASSOCIATION:
——Program announced ..... 560
——Spring meeting ..... 859
American fuels. R. F. Bacon and W. A. Hamor ..... 731
American Gas Association convention fixed. 469
American industry, editorial comment .... 433
AMERICAN INSTITUTE OF CHEMICAL ENGINEERS:
——Final program June meeting..... 949
——June meeting to be held at Wilmington, Del. ..... 786
——To meet at Wilmington ..... 919
AMERICAN INSTITUTE OF CHEMISTRY:
——Aims and purposes of the. Crane.. 457
——Formed to champion chemist ..... 326
——Council meets ..... 420
——Holds first annual meeting..... 697
——Meets ..... 469
——New York chapter formed ..... 829
AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS:
——Fall plans for meeting ..... 1131
——Winter meeting of (Institute of Metals Div.) ..... 391
——To meet in February ..... 227
——Editorial comment ..... 574
——Labor shortage discussed by..... 84
American Iron and Steel Institute, Spring meeting ..... 872
——Fall meeting plans ..... 1130
American Leather Chemists Association will meet at White Sulphur Springs 276

American Metric Association marks progress at Boston meeting ..... 83
AMERICAN OIL CHEMISTS SOCIETY:
——To meet in Hot Springs .....869, 919
——Fourteenth annual convention..... 895
AMERICAN PULP & PAPER ASSOCIATION:
——See under Paper and Pulp.
——Work reviewed ..... 323
American Relief Association makes announcement ..... 609
American Smelting and Refining Co. wipes out deficit ..... 566
American Society of Mechanical Engineers to have museum ..... 466
——Announcement ..... 34
American Society for Steel Treating:
——Regional meeting at Chicago ..... 343
——Will publish data sheets ..... 269
American Sole and Belting Leather Tanners Inc. ..... 650
American Turpentine Co., complaint against ..... 182
American Zinc Institute holds busy meeting at St. Louis ..... 871
AMMONIA:
——As nitrocellulose solvent (P.)..... 125
——Franklin discusses ..... 651
——Losses in carbonization ..... 732
——Recovery (P.) ..... 648
——Synthesis of, from its elements (P.) 177
——Synthetic, by the Claude process... 398
AMMONIUM SULPHATE:
——(P.) ..... 33
——Advanced in a moderately active market ..... 566
Amorphous theory, Beilby's ..... 733
Anesthetic compound (P.) ..... 319
Anhydride, phthalic, Manufacture of anthraquinone and (P.) ..... 510
Anti-dimming preparations for glass surfaces. Kuhn ..... 762
ANTHRAQUINONE:
——Manufacture of, and phthalic anhydride (P.) ..... 510
——Oxy-derivatives (P.) ..... 735
ARGENTINA:
——Imports American printing ink..... 826
——Linseed exports ..... 923
Arghan—a new fiber ..... 991
Argonaut mine disaster. The chemical engineer's part in the rescue work at Dushak ..... 349
Aromatic nitro-amino compounds (P.)... 273
Arsenate, Federal Phosphorus Co. not to produce ..... 650
ARSENIC:
——Alabama to produce ..... 610
——Australia has surplus ..... 741
——Canada may be source ..... 275
——Investigation predicts shortage..... 179
——Manufacture of acid and compounds (P.) ..... 778
——Montana source to be developed..... 562
——Metallic, Production of (P.) ..... 32
——Organic compound (P.) ..... 647
——Production, Research work to aid in increasing ..... 653
——Report too optimistic ..... 226
——Selling short on. Editorial ..... 753
——Stays in lime light ..... 608
——Trichloride affects industrial workers 849
ASBESTOS:
——Mines, Canadian, being developed... 131
——Protected metal, How it was developed commercially. Young ..... 244
Ash fuel, Germany using ..... 1088
Aterite. Milliken ..... 684
Atmospheric pollution [pointed out by Chandler medalist] ..... 131
Atomic speculation, editorial comment... 433
Australia, has surplus arsenic ..... 741
Automobile production, Increase in..... 637

B

Badische Anilin and Soda Fabrik, French-Badische convention ratified..... 421
Bakelite phenol production soon available 784
BAKING INDUSTRY:
——Incidence of research on. Hendrick.. 715
——Editorial ..... 710
Banking, The commercial banker's function in business ..... 487
Barberry bush, Poison for, developed.... 134
BARREL HANDLING:
——The dollars and cents of. Potts.... 293
——How to save money by proper methods of. Potts ..... 345
——A problem in, and how it is solved. Potts ..... 404
Barrels, restoring steel ..... 1078
Barytes, Freight rates on, held unreasonable ..... 878
Battery electrolytes, impurities in ..... 1065
BAUXITE:
——In 1922 ..... 78
——Again mined in British Guiana..... 599
——Composition and properties of diaspore and gibbsite ..... 602
——Producers, Discriminating law hits.. 517
——Refractory bonded with bentonite (P.) 603
——Improving structure of, refractories (P.) ..... 1125

Bearing metals, A study of. Bierbaum.... 304
Bearing corrosion ..... 1078
Beet sugar press cake, Composition of.... 587
Beilby's amorphous theory ..... 733
Bentonite, Bauxite refractory bonded with. (P.) ..... 603
Berry, Walter M., to direct Californian research ..... 1044

BIOGRAPHICAL SKETCHES:
——Acheson, Edward G. ..... 974
——Fortmeyer, George W. ..... 785
——Ruhm, Herman David ..... 873
——Rose, Charles K. ..... 888
——Whitaker, Milton C. ..... 1016
Bituminous shales, Continuous distillation of (P.) ..... 272

BLAST FURNACE:
——University of Minnesota to have experimental ..... 533
——Gases, Composition of ..... 553
Bleach, A new hypochlorite (P.) ..... 273

BOLL WEEVIL: (See also calcium arsenate)
——Fight is on ..... 561
——Nation will fight ..... 417
——National campaign for control of elects officers ..... 513
——Reports sought by Agricultural Bureau ..... 607
——A dominating factor in South ..... 1107
Bolting reel, a new ..... 1123

BOOK REVIEWS:
——30, 130, 177, 223, 464, 602, 730, 775, 867, 910, 946, 995, 1125
——Balaiew, N. T. Crystallization of metals ..... 602
——Chemical Engineering Catalog, Chemical Catalog Co., New York..... 177
——Chemisch-Technische Untersuchungsmethoden. Vol. 1. 7th Edition. Julius Springer, Berlin, 1921.... 464
——Colvin, F. and Juthe, K. Working of Steel ..... 911
——Crowther, J. A. Principles of Radiography ..... 731
——El Arte de los Metals. Translated from Spanish of A. A. Barba by R. E. Douglas and E. P. Mathewson 775
——Getman. Outlines of Theoretical Chemistry ..... 80
——Gillett, H. W. and Mack, E. L. Electric Brass Furnace Practice..... 731
——Index for Engineers A.S.M.E..... 996
——Jones, Grinnell. Nitrogen in Peace and War..... 995
——Juthe K. and Colvin, F. Working of Steel ..... 911
——Lewis and Randall. Thermodynamics and the Free Energy of Chemical Substances ..... 867
——Law. Temperature Carbonization Report of the Fuel Research Board for Years 1920 and 1921 of the British Department of Scientific and Industrial Research..... 464
——Mack, E. L. and Gillett, H. W. Electric Brass Furnace Practice..... 731
——Mahin. Quantitative agricultural analysis ..... 1127
——Metallurgical Transactions..... 775
——Norman. The Romance of the Gas Industry ..... 130
——Olsen, J. C. Van Nostrand's Chemical Annual ..... 177
——Sabatier, Paul. Fundamentals of Catalysis ..... 997
——Sampling and Analysis of Coal, Coke and Byprodacts. Methods of the Chemists of the United States Steel Corporation ..... 223
——Sisco, F. T. Technical Analyses of Steel and Steel Works Materials.. 770
——Standard Methods of Chemical Analysis. Edited by Wifred W. Scott in collaboration with thirty-six well-known analytical chemists..... 464
——Standard Specification for Laboratory Apparatus Adopted by the Manufacturing Chemists' Association of the United States..... 80
——Stillman, A. L. Briquetting..... 911
——Tables Annueles de Constantes et Donnés Numériques de Chimie de Physique et de Technologie. Vol. iv, 2nd Part..... 911
——Truscott. Textbook of Ore Dressing 1126
——Tuttle. The Analysis of Rubber.... 130
——Walker, Lewis and McAdams. Principles of Chemical Engineering.... 946
——Wyer. The Smithsonian Institution's Study of Natural Resources Applied to Pennsylvania..... 130
Boro-silicate glasses, acidic, decolorizing with neodymium oxide (P.) ..... 865
Bottle capping solution (B. P.) ..... 367
Bowles, Oliver. Director non-metals experiment station ..... 957
Brasses, Influence of phosphorus on.... 508
Brasses, and bronzes, Notes on. Whittaker 685

BRAZIL:
——Manganese exports..... 918
——Manufacturers, some problems of. Emley ..... 309
Breithut, Major, appointed chemical trade commissioner at Berlin..... 829
Brick kiln laboratory car dismantled.... 371

BRIQUETS:
——Process of making coke (P.)..... 415
——Record production in 1922 of..... 436

BRITISH:
——Association of drop forgers. Use of flash in forgings..... 600
——Chemical Industries 52, 292, 484, 781, 809, 844, 1071
——Technical developments in ..... 714
——Guiana, Bauxite again mined in... 559
——Royal Society, Important gift to.... 486
——Rubber restriction act..... 467

BRONZES:
——Notes on brasses and. Whittaker.. 685
——Strong ..... 976
Brown, F. C., made head of Bureau of Standards ..... 134
Buildings from the manager's viewpoint ..... 555, 732
Bulgaria, Sugar refining in..... 440
Bureau of Chemistry discusses food standards ..... 563

BUREAU OF MINES:
——Car to make a 6 months' trip ..... 468
——Expands ..... 515
——Fire does not stop work..... 610
——Important changes in personnel of.. 914
——Lime to get main efforts at non-metals station ..... 1088
——Loses building ..... 611
——Makes moving pictures..... 606
——Offers fellowships ..... 960
——Opens non-metals experiment station. 957
——Paper on limestone..... 546
——Plans ceramic studies..... 321
——Reviews rain-making scheme..... 517
——Tests detonators ..... 393
——Works on explosives .....440, 393

BUREAU OF STANDARDS:
——Augments staff ..... 1089
——Difficult to find successor to Stratton at ..... 88
——Dyes given much attention ..... 1132
——F. C. Brown, made head of..... 134
——Research should be fundamental.... 608
——Spontaneous changes in precision balances ..... 506
——Studies ingot structure of ingots of invar. ..... 552
——Will study fastness of dyes..... 183
Bureaus co-operate to study corrosion.... 516
Burgess, Geo. K., Director of Bureau of Standards ..... 757
——editorial comment ..... 754

BUSINESS:
——Action and reaction in..... 231
——Company dividends and financial notes 328
——Conditions in 1922 and the new year's prospects ..... 40
——Conditions, manufacturers report on 913
——Cycle, how it works..... 423
——Editorial comment ..... 573
——Failures fall off during February... 472
——Fnancial notes and company dividends ..... 328
——Healthy, prospects in heavy chemicals 89
——Profits in 1922..... 519
——The commercial banker's function in 487
——The present trend of..... 185
Butterworth-Judson Corporation called to account regarding picric acid plant 135

C

Cable rates, lower ..... 1050
Caetani honored ..... 132

CALCIUM:
——Acetate, April output shows decline 1089
——Acid phosphate (P.) ..... 462

——ARSENATE:
—— ..... 698
—— Ford would make ..... 179
—— Government investigations establish validity of prices ..... 694
—— Government may sell ..... 131
—— No evidence of price fixing on..... 565
—— Shortage predicted ..... 179
—— Supply adequate ..... 39
—— Treasury decision retains on dutiable list ..... 870
—— U. S. Agriculturists push ..... 465

——CARBIDE:
—— Anti dumping order issued..... 914
—— Order revoked ..... 1088
—— Production (P.) ..... 647
——Nitrate, Austrian comany to produce 696
Calendar (Society, coming events, etc.) 465, 512, 558, 606, 650, 697, 738, 780, 824, 870, 555, 997, 1040, 1084, 1128
California uses own resources in pottery making ..... 651
Camera, huge new government ..... 713

CANADA:
——Asbestos mines being developed ... 131
——Chemical imports, Countervailing duties fixed for ..... 39
——Experiments with nitrate fertilizer.. 310
——Experimental farms reports busy year 324
——Exports ..... 698
——Increase in newsprint production in 440
——May appoint customs officials at N. Y. ..... 1001
——May be arsenic source..... 275
——Mineral production in 1922.....158, 546
——Paper industry, Growth of ..... 78

——PAPER MILLS:
—— Increase operations ..... 87
—— Plan expansion ..... 277

CANADA (Continued):
——Paper and pulp exports show increase 610
——Prairie provinces yielding commercially valuable salts ..... 609
——Products, Countervailing duties on rescinded ..... 84
——Production of talc in..... 344
——Provide paper school ..... 651
——Tar sands, development work on.... 36
——To make alloy steel in..... 651

CAPITAL INCREASES, ETC.:
——47, 96, 191, 237, 286, 334, 382, 429, 478
Carbocoal plant, The Clinchfield. The Low Temperature Carbonization of Coal III. Curtis & Daughton 118, IV. Curtis & Geldard ..... 171

CARBON:
——ACTIVATED:
—— Abatement of industrial stenches by. Ray and Chaney ..... 1114
—— Carbon, Activated (P.) ..... 647
—— In gaseous reactions (B. P.) .... 605
—— Manufacture of ..... 977
—— For drying gases (P.) ..... 605
—— Selenium chloride used for ..... 183
——BLACK:
—— Increasing output of ..... 869
—— Plants, Texans oppose ..... 468
—— Production of becomes political issue in Louisiana ..... 915
——DIOXIDE:
—— ..... 131
—— Consumption grows ..... 651
—— Liquid, a glimpse of the industry Wikoff ..... 5
—— Research on ..... 627
——Removing from liquids ..... 1077
——Steel, influence of coaling rate on properties of ..... 502

CARBONIZATION:
——Ammonia losses in ..... 732
——(B.P.) ..... 866
——Low temperature of coal:
—— Curtis & Chapman I..... 11
—— Curtis & Geldard II..... 60
—— Curtis & Daughton III..... 118
—— Curtis & Geldard IV..... 171
—— Editorial comment ..... 3
——Stafford wood carbonization process.. 441
Carbonizing, Casehardening plant Timken Roller Bearing Co. Ehn..... 578

CARBOY:
——Acid, Closure for ..... 534
——Problems, Exhaustive study of, concluded by Trade Association .... 88
Carnegie Technical School:
——Summer courses ..... 698
——Working on oil sludges..... 958
Cascara situation causes alarm..... 592

CASEIN:
——Coats, Investigations of ..... 738
——May be first item in tariff hearing.. 1134
——Glue (B.P.) ..... 463

CASE HARDENING:
——A new method for. Hodson ..... 308
——Plant Timken Rolleer Bearing Co. Ehn 578

CATALOGS RECEIVED:
——643, 730, 774, 819, 862, 905, 951, 1036, 1124

CATALOGS WANTED:
..... 643

CATALYSIS:
——Reactivating spent catalyzers (P.)... 779
——Material, Process of producing (P.).. 953

CELLULOSE:
——ACETATE:
—— Patents .....557, 866, 225
—— Solvent (P.) ..... 128
——Attempt to collect literature on ..... 134
——Derivative products, treatment of (P.) 735
——ETHER:
—— Composition (P.) ..... 510
—— (B. P.) ..... 511
—— Production of (P.) ..... 647
—— Solvent (P.) .....271, 366
——From wood (B. P.) ..... 908
——Imports included in return ..... 833
——New division of A.C.S. seeks support 277

CEMENT:
——A new fire ..... 643
——China to produce ..... 607
——Comparison made on prices of ..... 536
——Production twice that of a year ago.. 566
——Record shipments of, made in 1922.. 185
——To discuss constitution of ..... 651
——Vigorous activity in California industry ..... 999
Census Bureau, editorial comment ..... 575

CENTRIFUGAL:
——Machine (B. P.) ..... 178
——Separator (P.) ..... 1083

CERAMICS:
——See also American Ceramic Society. Porcelain, Pottery.
——Study planned by Bureau of Mines.. 957
——Industries, Silicate of soda in. Vail 636
——Laboratory proposed ..... 875

CERAMICS (Continued):
——Recent progress (P.) ..... 1125
——Sagger construction (P.) ..... 823
——Studies, Bureau of Mines plans.... 321
——Wares ..... 698
Cereal chemistry, Courses in at Minnesota University ..... 183
Challenge to industry ..... 1104
Chamot, Prof. E. M. addresses New Jersey Chemical Society ..... 184
Charcoal briquet, Creating a new industry for ..... 540
Chem. & Met. as text book, comment... 196

CHEMICAL ENGINEERING:
——In the production of coated fabrics. S. D. Kirkpatrick ..... 1017
Principles of—a symposium review of ——Walker, Lewis & McAdam's book.. 946

CHEMICAL EQUIPMENT ASSOCIATION:
——Discussion. Everett ..... 173
——Appoints committees ..... 373
——Comment on the ..... 559

CHEMICAL:
——British industries, technical developments in ..... 714
——Companies, Germany unable to fulfill American contracts ..... 652
——Definite need in food, Mendel says... 1042
——Exports in February show gain.... 739
——FOUNDATION:
—— Continues to hold patents ..... 132
—— Government reopens suit against... 1045
—— Government suit making little progress ..... 1088
—— Has peaceful week ..... 1133
—— Suit adjourned till June 4 ..... 874
——IMPORTS:
—— Canadian, Countervailing duties fixed for ..... 39
—— For December fall sharply ..... 652
—— For 1922 increased 24 per cent in value ..... 782
——INDUSTRIES EXPOSITION:
—— Advisory committee for 1923 expanded ..... 919
—— Exposition plans course in chemical engineering ..... 961
—— Plans for 1923 taking shape .... 1091
—— Progress to be reflected in ..... 1134
—— Report on, editorial comment ..... 193
——INDUSTRY:
—— Germany trying to preserve her.. 908
—— The civic aspect of, editorial comment ..... 575
——Organic production gains 177 per cent in 7-year period ..... 740
——Products, American, Bright outlook for ..... 653
——Production, Organization, the keynote of. Whittaker ..... 104
——Pulp, Sulphur-free lye used for odorless manufacture of ..... 506

CHEMICAL:
——Salesmen dine and hold business meeting ..... 740
——Solutions, Effect of, on various woods used in tanks. Hauser and Bahlman 159
——Tariff rate protests will be heard first 224
——TRADE:
—— Uniform contract for proposed.... 657
—— Trade commissioner urged for Germany ..... 786
——United Kingdom increases exports in first quarter of year ..... 1047
——WARFARE SERVICE:
—— Activities of the ..... 418
—— Corrosion report delayed ..... 227
—— Program of Secretary Davis ..... 610
—— Tear gas adopted by Washington police force for mob control.. 134
—— To dismantle chlorine plant..... 612

CHEMISTS AND CHEMISTRY:
——Achieve victory over disease ..... 1133
——Foreign amazed at developments here 741
——By radio ..... 650
——Editorial comment ..... 431
——Future of in iron and steel industries 1030
——Manufacturing hold election..... 1043
——Services of in demand ..... 1004
——Women's club urges appreciation of. 372

CHICAGO:
——Chemists club elects new officers.... 871
——Market reports 91, 187, 281, 377, 473, 567
Chilean nitrate survey, Bain to make.... 1042
——Sales larger than last year ..... 1133
China to produce cement ..... 607
China clay, Progress of, in industry.... 52
Chloracetones, Separation of (P.)..... 224

CHLORHYDRIN:
——Dehydrating solutions (P.)..... 822
——Of organic liquids (P.)..... 778

CHLORINE:
——Industry in U. S. Braillier ..... 847
——Volatilization ..... 215
Chlorodizing silver ores ..... 938
Chrome alum (B.P.)..... 273

CHROMIUM:
——Compounds (B.P.) ..... 319
——Compounds (P.) ..... 605
——Ore production in Rhodesia expands. 1044
——Marketing of ..... 507
Citric acid and citrate of lime ..... 223
Claude process, Synthetic ammonia by... 498

CLAY:
——American and English ball..... 460
——Production, New Jersey third state in 374
Closure, Exhaustive study of carboy problems concluded by Trade Association ..... 88, 534

COAL:
——CARBONIZATION:
—— (B. P.) ..... 274
—— (P.) ..... 271
—— Low temperature of 11, 60, 118, 171
——Commission report disappointing.... 182
——Editorial comment .....147, 195, 288
——German brown, compared with American lignite. Hood ..... 58
——Storage, engineering societies investigate ..... 870
——Use of pulverized ..... 1024

COAL TAR:
——Census completed ..... 1087
——Dehydrating (P.) ..... 779
——Distillates, standard tests asked for.. 1138
——Dyes, imports increase in May..... 1047
——Imports, Invoices of, must show makers' name ..... 695
——Industry, German, affected by lack of materials ..... 956
——Men confer with customs official.... 35
——Products and vegetable oils in 1922 43
——Products show more activity..... 376
——Products, market, see under market conditions.
——Reports, Commerce department to amplify ..... 516
——Strength standards adopted for imports ..... 783
——Survey being made by Tariff Commission ..... 653

COBALT:
——Electroplating with ..... 317
——Imports included in return ..... 833
Code of ethics adopted for engineers.... 34

COKE:
——As a blast-furnace fuel ..... 290
——Byproducts in 1922 ..... 348
——City plants, Canada favors ..... 1133
——Converting non-coking fuel to coking fuel (P.) ..... 1083
——Industry recovered in 1922 despite difficulties. McBride ..... 163
——Briquets, Process of making (P.) ... 415
——Determination of specific gravity of. Selvig & Parker ..... 547
——Koppers Co. fellowship on ..... 627

——MANUFACTURE:
—— From coal blends (P.) ..... 603
—— Two stage process for (P.)..... 556
——Oven heat balance ..... 460
——Oven design (P.) ..... 1083
——Plants plan to install new ovens.. 323
——Production rising ..... 1135
——Shortage in both France and Germany 403
College of Mines, Seattle, Wash., fellowship ..... 698

COLLOIDS:
——Chemists hear Donnan on membrane equilibria ..... 727
——Coordinating data ..... 1117
——Mill, Food products from (B. P.)... 320
——Removing matter from mineral pulp (P.) ..... 865
——Symposium at Wisconsin. Report.. 1117
Colloidal fuel (P.) ..... 604
Color laboratory, Agriculture department plans work for..... 467
Column still, How do you operate? Rhodes ..... 590
Combination of old elements patentable. Gustin ..... 222
Combustion myth to be settled ..... 845
Company dividends and financial notes.. 328
Compression, Evaporation by. Gensecke. 448

CONCRETE (See also cement):
——Manufacture and application of lightweight slabs. A. G. Wikoff ..... 975

CONDENSATION PRODUCTS:
——From phenols and aldehydes (P.).... 33
——Formaldehyde (B. P.) ..... 82
——Resinous (P.) ..... 33
Conductivity, Thermal, of insulating brick 643
Conical mills (P.) ..... 865

CONSTRUCTION AND OPERATION:
——380, 750, 795, 839, 927, 989, 1001, 1055, 1099, 1143
Contracts. The menace of loosely drawn, editorial 50; Gustin ..... 70

COPPER:
——Alloys, Use of copper and in chemical engineering. Schneider ..... 682
——Cost, new anode alloy cuts ..... 324
——Increase in metal exports ..... 542
——Nickel solutions (B. P) ..... 82
——Ore (P.) ..... 557
——Sulphate from scrap (P.)..... 33
——When it should be used in chemical equipment. Steffens ..... 682
——Use of, and its alloys in chemical engineering. Schneider ..... 682

COPPER AND BRASS RESEARCH ASSOCIATION:
——Comment ..... 4
——Summarizes first year's activity .... 37
Cordage, Manufacture of twine and ..... 175
Cored crystals and metallic compounds. Bain ..... 65
Corn Products Refining Co. .....325, 521
Corporation, To borrow money from a bank, what must do? ..... 758
Corporative enterprises, success of ..... 43

CORROSION:
——Schneider ..... 682
——Milliken ..... 684
——Miner ..... 687
——Whittaker ..... 685
——Bearing ..... 1078
——Data available in near future ..... 1000
——Galvanic, on yacht Sea Call. Comment 148
——Of rust proofed iron and steel. Wood 769
——Research in ..... 627
——Resisting iron and steels. Aupperle 681
——Resisting work. McKay..... 686
——Liquids, valves for (P.) ..... 1086
Costs, Government to investigate production abroad ..... 787
Cost system, Testing a ..... 550
Cottonseed, see oil.
Creolin pearson duty. Appraisers sustain protest on ..... 960

CRESOL:
——May be placed on free list ..... 277
——Treasury upholds duty on ..... 745
Critical tables, Opportunities for research in compiling ..... 36
Crusher (P.) ..... 415
Crystallizer, Continuous (P) ..... 953
Crystallization, metals ..... 1075
Cupola mixtures, modern methods for making. Campbell ..... 492

CURRENT LITERATURE:—Important Articles
——365, 414, 469, 507, 553, 601, 644, 732, 776, 820, 863, 909, 954, 996, 1040, 1084, 1127
Curtis, Harry A. to direct chemical engineering at Yale ..... 917

CUSTOMS:
——Expect new dye rules this month... 324
——Service at port of New York investigated by committee ..... 1002
Cyanamide (B.P.) ..... 225

CYANIDE:
——Air reduction enters the field ..... 515
——Alkali-metal. Production of (P.).. 128

D

Damages, Novel claim for. Gustin ..... 496
Dealers forbidden to pose as manufacturers 506
Decolorizing carbons, Evaluation of. Sanders ..... 541
Decomposition of oil, production of hydrogen by. Weaver .....764, 939, 1072
Dehairing hides (B. P.) ..... 320
Delahanty, Thomas W. joins chemical division ..... 916

DEPARTMENT OF AGRICULTURE:
——Boll weevil report sought by..... 607
——Bureau of Chemistry Chief to be selected ..... 611

DEPARTMENT OF COMMERCE:
——Imports statistical service to expand 469
——To amplify coal-tar reports ..... 516
——Feiker heads material survey ..... 651
Desulphurizing oils (B. P.) ..... 320
Detonators, Mines bureau tests ..... 393
Deutschland duties dispute focussed in Baltimore ..... 999
Diarylguanidines, Production of (P.) .... 779
Diaspore, Composition and properties of, bauxite and gibbsite ..... 602
Diolefine products (P.) ..... 81
Dioxyperylene (B. P.) ..... 908

DISTILLATION:
——Column still ..... 1083
——How do you operate a column still? Rhodes ..... 590
——Of hardwood in Canada ..... 724
——Oil shale, light shed on ..... 892
——Rectification, Fundamentals of conditions for reversible rectification. Van Nuys ..... 408
——Rectification—Binary liquids, methods of operating which affect limiting composition of. Van Nuys ..... 359
——Rectification — Fundamentals of — Effect on, of liquid feed at intermediate levels. Van Nuys ..... 311
——Rectification—Fundamentals of—Rectification of binary mixtures. Van Nuys ..... 255
——Rectification — Fundamentals of — of binary mixtures. Van Nuys.... 297
Distillation and evaporation (B.P.) .... 225

DRYING:
——Air, methods of. Holden .....801
——Drier (P) ..... 953
Duralumin, Hardening of ..... 79

DUST:
——Engineers, U. S. wants ..... 559
——Fires and explosions, prevention of D. J. Price ..... 902
——Hazards report coming ..... 563
——Zinc, and its uses ..... 644

DYES:
——(B. P.) ..... 367
——(P.) .....557, 318
——Anthraquinone (P.) ..... 271
——Azo and chromium compounds (B. P.) 320
——Blue vat (P.) ..... 33
——Chrome (P.) ..... 271

Chem-Eng.
Wilson

# INDEX


DYES (Continued):
——Daily customs reports on ..... 276
——Final rules issued by Treasury Department ..... 466
——Firms merge ..... 1045
——France seizes four German dye plants 914
——IMPORTS AND IMPORTERS:
—— Figures, Department of Commerce hopes to collect ..... 88
—— New organization contemplated.... 829
—— Of coal-tar—in 1922 ..... 653
——Industry, German, faces no immediate shortage ..... 611
——Japan hoarding ..... 738
——Leuco vat (B. P.) ..... 82
——New yellow, produced in U. S..... 1000
——No action on reparation dyes as Congress quits ..... 465
——Plan complete study of fastness of.. 185
——Pyrazolone (B. P.) ..... 82
——Swiss industry ..... 792
——Tariff rules, proposed ..... 416
——Tentative standards for coal tar in import trade adopted ..... 826
——Ultramarine plant started ..... 961
——Valuation basis, officials still grope for 276
Dynamite blasting tests ..... 308
Easier reading mercury thermometers.... 805
Economic review of 1922 ..... 231

E

EDITORIAL:
——A public servant goes into industry.. 886
——A wake or awake? ..... 574
——A week of paper and pulp ..... 709
——Administration ..... 146
——Alcohol, industrial co-operation on .. 575
——Aluminum sulphate as a soil corrective ..... 887
——American Chemical Society, meeting at New Haven ..... 665
——American industry ..... 433
——An amazing opportunity just missed 735
——An idealist's plaything ..... 798
——An integrated society convention... 1058
——An introduction to the chemical engineering industries ..... 1014
——An opportunity for the inventive mind 930
——Atomic speculation ..... 433
——Awaiting a Moses ..... 1101
——Benefaction to science ..... 337
——Better tools for industry ..... 1015
——Bio-chemical engineering ..... 971
——Breaking him in ..... 1059
——Budget system ..... 98
——Burgess, Geo. K., Director Bureau of Standards ..... 753
——Business cycles and unemployment 621
——Carbonization of coal ..... 3
——Census information ..... 575
——Changing our datum points ..... 842
——Chauffeur ..... 335
——Chemical engineering in industry.... 1015
——Chemical Exposition, Report on .... 193
——Chemical industries. The civic aspect of ..... 575
——Chemicals, heavy ..... 383
——Chemistry ..... 431
——Chemistry-commerce course at University of Wisconsin ..... 754
——Christening a new technology ..... 924
——Coal ..... 288
——Coal ..... 147
——Coal ..... 195
——Colloid mill ..... 241
——Competition for natural gas supplies 1101
——Completing the circle of "Chem. & Met.'s" service ..... 649
——Congress adjourns ..... 480
——Contracts, loosely drawn, The menace of ..... 50
——Cracking processes ..... 241
——Curious ideas of conservation..... 1014
——Current statistics ..... 480
——Curtailment of education ..... 1103
——Danger to scientific progress ..... 1102
——Dean's law of diminishing returns.... 754
——Education ..... 287
——Electrochemical Society honors E. G. Acheson ..... 849
——Encouragement of intuition ..... 887
——Engineers ..... 2
——Engineer's license, Have you obtained? 574
——Errors ..... 336
——European conditions ..... 385
——Failure of machinery ..... 239
——Federal payroll ..... 240
——Federated Societies, The future of.... 145
——Fertilizer industry ..... 335
——Fertilizer industry and long-term credits ..... 49
——Flat tire of industry ..... 1059
——Fluorspar resources—past, present and future ..... 799
——Foreign policy ..... 287
——Franklin, Benjamin, and national thrift ..... 97
——Fuel supply in industry ..... 194
——Fundamentals of rectification ..... 195
——Future progress in steel making.... 971
——Gasoline, Dollar ..... 479
——Heats, carburizing ..... 3
——Henry Ford works miracles ..... 711
——Hopeful outlook ..... 1
——How shall we sell our research?.... 1013
——Ice cream that will not melt..... 842
——Ignorance of technology ..... 240
——Immigration ..... 288
——Immigration, Our problem of..... 50
——Indexing technical journals..... 799
——"Inorganic Chemistry" by Z. C. Daze 622
——Intelligence tests ..... 104
——Intelligent caution or careless ignorance ..... 709
——Journal bearing ..... 289
——Journalism ..... 384

EDITORIAL (Continued):
——Labor and banking ..... 885
——Lignite ..... 527
——Little homily on man in works..... 929
——Lime ..... 432
——Lime manufacture ..... 98
——Looking to the future of the paper industries ..... 1013
——Lunatic fringe of science ..... 886
——Making the debtor pay ..... 885
——Materials for equipment construction 665
——Messrs. Gary et al. are misinformed.. 1057
——National Research Council ..... 528
——Natural gas resources..... 194
——Nitrogen again to the fore..... 841
——Oil cracking ..... 241
——One aspect of the labor shortage..... 1015
——One way to finance new ventures .... 623
——Organic chemistry, Definition of.... 193
——Patent office ..... 384
——Patents, patenting and publicity.... 622
——Pearls, synthetic ..... 239
——Nitrogen again to the fore..... 710
——Pekinese or Pekiner? ..... 241
——Plauson's mill .....
——Portland cement industry and its association ..... 710
——Power outlook and the chemical industry ..... 573
——Profit sharing in a small plant.... 797
——Promoting mutual understanding through intersectional meetings.... 885
——Protest from Germany ..... 289
——Psychology of glass ..... 337
——Public education ..... 432
——Putting a value on an education.... 798
——Radioactive appliance as a cure all. 1102
——Reducing fire risks in chemical plants 973
——Research ..... 146
——Researching staff of life ..... 710
——Reserves of natural nitrate ..... 973
——Rosenhaim, Dr. Walter..... 433
——Rubber ..... 383
——Ruhr ..... 385
——Ruhr ..... 336
——Salaries for public servants ..... 527
——Sales contract, Uniform for heavy chemicals ..... 693
——Science ..... 529
——Scrap obsolete equipment ..... 621
——Secrecy ..... 528
——Self-starter in automotive research.. 972
——Significance of industrial hydrogen.. 931
——Selling short on arsenic ..... 753
——Selling the ultimate consumer..... 1103
——Sir Joseph conquers ..... 755
——Sizing up the new graduate..... 1059
——Skating on thin ice ..... 1057
——Smuggling ..... 239
——Sodium sulphide, problems in the production of ..... 49
——Smoke damage and chimney height.. 280
——Standard, Purpose of ..... 479
——Statistics ..... 194
——Statistics ..... 147
——Steel ..... 145
——Steel, Dirt in ..... 51
——Steel production, recovery in ..... 3
——Stock dividend ..... 99
——Tanning chemist ..... 337
——Tariff law ..... 99
——Tariff problems ..... 195
——Tax free security ..... 431
——Technical man and his job ..... 1058
——Technology and the raw material monopolies ..... 1014
——Top of the hill ..... 573
——Transportation and our prosperity.. 842
——Turning refuse into money ..... 1058
——Tut-ankh-Amen's vengeance and its commercial parallel ..... 797
——Up to date in going backward..... 842
——Use of the word "engineer" ..... 623
——War department ..... 2
——Whitaker, M. C., Perkin medalist... 97
——White tiles in black places..... 930
——Why did it break? ..... 481
——Why not make our own synthetic valuables? ..... 930
——Wool, artificial ..... 480

EDUCATION:
——Chemistry-commerce course ..... 754
——Editorial comment ..... 287
——Engineering, promotion, meeting.... 1135
——Technical, in metallurgy, Hayward.. 599
Eimer & Amend honor old-time employees 1003

ELECTRIC:
——Enamel furnace lowers rejections on stove parts ..... 364
——Founders continue research activities 999
Electrochemistry, Research problems in.. 256
Electrolytes, impurities in battery ..... 1065
Electrolytic oxidation, Smull and Subkow 357
Electro-Metals planning California development ..... 1000
Electroplating with cobalt ..... 317

ELECTRON:
——Currents in high vacuum, Methods of controlling ..... 158
——Emission from heated metals ..... 69
——Emission from thoriated filaments... 210

EMULSIONS:
——(B. P.) ..... 129
——Breaking down (P.) ..... 273
——Oil (B. P.) ..... 82
——Petroleum, The resolution of, Dodd. 249
Enamel-lined apparatus, Miner ..... 687

ENGINEERING:
——Colleges neglect social sciences..... 325
——Council reviews accomplishments.... 133
——Foundation elects officers ..... 417
——Museum ..... 466
——Schools, Attendance at ..... 260
——Tables for low pressure air and gas. 311

ENGINEERS:
——A longer college course for, Turneaure 18
——Licensing laws for ..... 588
——Plan world congress in 1926 ..... 136
——United States wants dust engineers.. 559
——Texas, stage trip ..... 559
England, Expansion of chemical industry. 781

EQUIPMENT:
——News:
—— 642, 730, 774, 818, 801, 861, 904, 951, 992, 1035, 1079
—— Ammonia compressors for Canada. 904
—— Arca regulator ..... 819
—— Automatic furnace and quencher.. 642
—— Ball bearing self priming pump. 730
—— Bolting reel, new ..... 1123
—— Conical mill feed ..... 1036
—— Container car tanks ..... 1036
—— Direct connected air compressor unit ..... 992
—— Economy recorder ..... 774
—— Gasoline shovel ..... 774
—— Heavy duty motor ..... 642
—— High-temperature metal melting.. 1036
—— High-temperature refractory ..... 951
—— Horizontal oil engine ..... 818
—— I-beam trolley ..... 992
—— Judelson drier ..... 819
—— Needham blower ..... 992
—— New flow meter ..... 992
—— Pendulum hardness tester ..... 1124
—— Pressure regulator ..... 951
—— Pump, diaphragm for filter presses 1124
—— Pump, new chemical ..... 1123
—— Pump valves ..... 1079
—— Refractory mortar, requirements of 1080
—— Rubber-lined acid tank ..... 818
—— Rubber-lined barrel ..... 905
—— Sink outlet ..... 730
—— Steel belt conveyors ..... 861
—— Temperature regulator ..... 992
—— Thermal conductivity ..... 992
—— Thermolith cement ..... 643
—— Time punch for recorders ..... 992
—— Unit ash conveyor ..... 905
—— Unit heater for industrial plants.. 818
—— Weighing meter for liquids ..... 992
——Statistics to be gathered monthly.. 787
——SYMPOSIUM ON MATERIALS:
—— Aluminum for, Blough ..... 686
—— Chemical, Miner ..... 687
—— Chemical stone ware and its application, Knight ..... 689
—— Chemical, When copper should be used in, Steffens ..... 683
—— Construction, Materials for, editorial comment ..... 665
—— Glass in chemical industry, Greene. 689
—— Industrial pyrex, Marshall ..... 690
Etching aluminum bronze ..... 852

ETHYLENE:
——As a source of alcohol, Davis.... 116
——Glycol: Its uses and properties, Curme and Young ..... 169

EUROPEAN:
——Distilling methods for coal tar in.... 461
——Conditions as I saw them, J. S. Negru. 220
——Conditions, editorial comment .... 385
——Conditions to be discussed at joint meeting ..... 227

EVAPORATION:
——(B.P.) ..... 274
——By compression, Genesecke ..... 448
——Liquids (B.P.) ..... 511
——Milk (P.) ..... 271
——Pans, Brittle steel ..... 577
——Preventing of stored liquids (P.) .... 509
——Recompression system for, Badger..26, 73
——Vapor recompression, calculation of, Pridgeon ..... 1109
Exchange, German ..... 186
Expansion of English chemical industry. 781

EXPLOSION:
——Damages helium purification plant.. 325
——Dust, prevention of, D. J. Price.. 902
——Rends dye plant ..... 697
——Study at Carnegie ..... 1091

EXPLOSIVES:
——(P.) ..... 557
——(B. P.) ..... 368
——Bureau of mines works on .....393, 440
——Hazard met with little loss ..... 608
——(High) for detonators (P.) ..... 271
——Liquid oxygen as an ..... 374
——Mines Bureau tests dentonators.... 393
——Old, being used ..... 608
——Perchlorate (P.) ..... 225
——Smokeless-powder dynamite (P.) .... 825

EXPORT:
——Canada increases, of calcium carbide. 877

——CHEMICALS:
—— April chemicals practically of same volume as March shipments.. 999
—— February show gain ..... 739
—— December decline ..... 278
—— GERMAN:
—— To America ..... 24
—— Restricted ..... 695
—— Show gradual recovery in 1922.... 375
—— And allied products show gains in trade ..... 786
——Official figures verify expansion in trade for chemicals ..... 871
——Statistics to be compiled in New York 182
——Trade, U. S. sulphur producers make bid for ..... 39

EXPOSITION: See also CHEMICAL INDUSTRIES:
——Report appears ..... 238

EXTRACTION:
——(P.) ..... 178
——Ores, copper, lead and silver (P.)... 557
——Vanadium, uranium and radium from certain ores (P.) ..... 224
Eyesight Conservation Council:
——Appoints directors ..... 277
——Elects officers ..... 561

F

FATIGUE:
——In metal. Jenken ..... 811
——RESISTANCE:
—— Dirty metal ..... 222
—— Research on ..... 892
FEDERAL:
——Employees, Reclassification of, delayed 34
——Phosphorus Co. not to produce arsenate ..... 650
——Specification board officials named.. 918
——Trade Commission. Dealers forbidden to pose as manufacturers..... 506
Federated American Engineering Societies, editorial comment ..... 145
Felker heads material survey..... 651
Feldspar colloquium planned by the American Ceramic Society..... 87
Fellowships offered by Bureau of Mines and colleges ..... 960
Fermentation, What happens during. Nord 351
FERRIC (SEE IRON):
FERRO (SEE IRON):
FERTILIZER:
—— ..... 698
——(B.P.) ..... 274
——Alcohol interests to produce..... 792
——Chemicals active ..... 655
——Commercial. (P.) ..... 319
——Convention at Storrs..... 1134
——Financing sales ..... 1108
——Function of magnesium in..... 163
——Good car service for movement of.. 739
——High grade, used this season..... 958
——Industry in review ..... 1105
——Pennsylvania. Distribution of..... 38
——What is the future of mixed? Bear. 1121
——INDUSTRY:
—— And long-term credits, editorial comment ..... 49
—— Consumes the largest quantity of sulphuric acid ..... 353
—— Long-term credits and, comment.. 291
——Quiet market in France..... 918
——Manufacturers confer with agricultural college officials ..... 35
——Merger in sight..... 875
——Monopoly seen by trade commission.. 516
——Nitrite, Canadian experiments with.. 310
——Number of high analysis reduced.... 420
——PHOSPHATE:
—— B. P. ..... 129
—— P. ..... 556
——Standard formulas for, adopted by New England States..... 84
——Statistics, Improved service arranged in distribution of ..... 37
——To stimulate use of potash in..... 783
FIBER:
——Companies merge ..... 135
——Containers, Research on ..... 627
——Material, Method of treating. (P.).. 735
——Vulcanized, Building receptacles of. Bell ..... 688
Filter press for wax (P.) ..... 1126
FINANCIAL NOTES:
——831, 875, 922, 960, 1008, 1046, 1094
——Company dividends and ..... 328
Fine powders, Method of producing (P.).. 415
Fire-extinguishing compounds (P.) ..... 33
Fireproofing compound (P.) ..... 995
Flash, Use of in forgings ..... 600
Flexible provisions of tariff, methods of operating ..... 738
Flotation process case heard by commission ..... 610
Fluorspar situation alarms non-metals specialists ..... 697
Foaming of boiling liquids, Method of controlling (P.) ..... 319
Food standards. Skinner ..... 483
FORD HENRY:
——Baruch supports ..... 275
——Tell—Yes or no—Sentiment of Senate 373
——Would make calsium arsenate..... 179
FOREIGN:
——Chemists amazed at developments here ..... 741
——Discrimination, Tariff commission studies ..... 514
——Policy, editorial comment ..... 187
——TRADE:
—— Opportunities.
——790, 840, 884, 928, 970, 1012, 1056, 1100, 1144
—— Zones, Klein explains Hoover stand on ..... 322
FOREST PRODUCTS:
——Research carried on by Canada.... 768
——Chemicals exhibit to feature paper show ..... 276
Forgings, Use of flash in..... 600
FORMALDEHYDE:
——(P.) ..... 605
——Condensation products (B.P.) ..... 82
Formates, Converting into oxalates (P.) 509
Fortmeyer, George W..... 785
Foundations and floors..... 954
FRACTIONATION (See also DISTILLATION):
——Distillation—How do you operate a column still. Rhodes ..... 590
——Rectification
—— Of binary mixtures. Van Nuys.. 207
—— Fundamentals of. Van Nuys.... 255
—— Fundamentals of, Effect on, of liquid feed at intermediate levels, Van Nuys ..... 311
—— Binary liquids, methods of operating which affect limiting composition of. Van Nuys ..... 359
—— Fundamentals of conditions for reversible rectification. Van Nuys 408
FRANCE:
——Coke shortage in both Germany and. 403
——Commodity markets in ..... 701
——Government, French-Badische convention ratified ..... 421
——Lifts double duty ..... 563
——Metallurgical production ..... 698
——Motor fuel development encouraged by ..... 651
——Purchase of Haber rights approved by deputies ..... 323
——Quiet fertilizer market in ..... 918
Franklin discusses ammonia ..... 651
Franklin medal awarded ..... 697
Freight rates, unfavorable outlook for lower ..... 916
Friction testing of lubricating oils. Herschel ..... 594
FUEL:
——Artificial (P.) ..... 415
——Blast-furnace, Coke as a ..... 270
——Briquet (B.P.) ..... 367
——Briquets, Record production in 1922 of ..... 456
——Carbon and briquet (P.) ..... 557
——Kerosene, research on ..... 229
——Liquid (P.) ..... 779
——Motor (B.P.) ..... 274
——Oils in internal combustion engines.. 553
——Oxidized, Gum formation with ..... 545
——Producing gaseous (P.) ..... 907
——Supply in industry, editorial comment 194
——Symposium, Manning will lead .... 321
——Utilization discussed ..... 607
Fume control (P.) ..... 604
FURNACE:
——New automatic, and quencher ..... 642
——Small, Heat salvage in. Buell..... 638
——Tested at Massachusetts Institute of Technology ..... 697
Furnaces and ovens, Materials for ..... 79

G

Garbage, New York's problem ..... 650
Garnet quarry, Ford buys ..... 914
GAS:
——Absorption. Theory of, an extension of. W. B. Van Arsdel ..... 889
——Accelerated reactions in pulsating currents ..... 434
——Action of sulphurous gases on nickel-chromium alloys ..... 976
——Active carbon for drying (P.) ..... 605
——Blue, Manufacture of ..... 317
——Calorimeter, Recording ..... 777
——Compression, Hazards in ..... 632
——Condensers (B.P.) ..... 866
——Currents, pulsating, accelerated reactions ..... 198
——Desulphurizing (B.P.) ..... 129
——Determination of, in metal..... 123
——Determining naphthalene in (P.) ... 415
——Engineering, Johns Hopkins to give course in ..... 871
——Explosion wrecks Springfield plant.. 277
——Flow, Pulsations in ..... 776
——From producers, treatment of (P.).. 907
——Fuel, producing ..... 907
——In monel metal ..... 713
——In metals ..... 1069
——Industrial section to organize ..... 960
——Low temperature retort (P.) ..... 1082
——MASK:
—— Develops ..... 698
—— Universal ..... 982
——Mixture (P.) ..... 272
——PRODUCER:
—— (P.) ..... 605
—— ..... 559
——Statistics, British ..... 413
——"Therm" charges for ..... 733
——Treating (B.P.) ..... 368
——Use of, is increasing ..... 875
——War, cures disease ..... 827
——Water (P.) ..... 1082
GASOLINE:
——Can it be made from animal and vegetable oils? ..... 821
——Comment ..... 290
——Cracking litigation ..... 1131
——General motors to produce anti-knock 742
——Natural-gas, Cost of producing..... 297
Gathmann solvent recovery process suit settled ..... 277
GELATIN:
——Edible, Research on ..... 4
——Jellies, A new instrument for testing glue and. Richardson ..... 551
——Research on ..... 618
General Motors to produce anti-knock gasoline ..... 742
GERMANY:
——Apologia ..... 309
——Bringing plants here ..... 1134
——Chemical companies unable to fulfill American contracts ..... 652
——Coal tar industry affected by lack of fuel and raw materials ..... 956
——Coke shortage in both France and .. 403
——Dye trade faces no immediate shortage ..... 611
——General reduction in export duties.. 828
——Glass industry, Present situation in.. 436
——Goods free from export regulations.. 1087
——POTASH:
—— Industry not dependent on Ruhr coal ..... 783
—— Larger sales of ..... 1087
—— Output in 1922 a record..... 1042
—— Syndicate in control of ..... 1085
——Striving to preserve chemical industry 998
——To pay Italy in books ..... 373
——Trade commissioner urged for ..... 786
Gibbsite, Composition and properties of diaspore, bauxite and ..... 602
GLASS:
——Belgian handmade, production declines 964
——Business, Auto manufacturers enter.. 422
——Data on physical and chemical properties ..... 397
——Drawing of sheets simultaneously.. 823
——Flattening sheet (P.) ..... 823
——Improved for industrial goggles .... 763
——In chemical industry. Greene ..... 689
——INDUSTRY:
—— Austrian ..... 650
—— German, Present situation in .... 436
——Manufacture, Some comparative statistics on, in 1919 and 1921..... 407
——Patent question closed ..... 698
——PYREX:
—— As a material for chemical plant construction. Marshall ..... 216
—— Industrial applications. Marshall 216
——Surfaces, anti-dimming preparations for ..... 702
——Rings.—A new filling material for towers. Zeisberg ..... 9
——To establish plant for manufacture in Peru ..... 874
——Wool insulation ..... 1116
Glucose (B.P.) ..... 178
GLUE:
——A new instrument for testing glue and gelatin jellies. Richardson ..... 551
——Perkins reissue patent for, upheld. Gustin ..... 124
Glycerine patent, Chemists investigate ruling on ..... 701
Goggles, industrial, improved glass for... 763
Gold, White arsenic makes, profitable.... 919
GOLD AND SILVER:
——Data ready ..... 650
——Situation, Study urged ..... 227
Goldsmith, Would make, chief tariff investigator ..... 827
Goodrich Co. B. F., earns $3,000,000 ... 520
Goods in bankruptcy. Gustin ..... 458
Government to investigate production costs abroad ..... 787
Grape factories, Utilizing the waste of .. 356
GRAPHITE:
——Crucibles, Studies on ..... 243
——Purifying (B.P.) ..... 463
Grasselli Co., award to ..... 870
Guanidine nitrate (P.) ..... 224
Guanidine salts (P.) ..... 604
Gum formation with oxidized fuels .... 545
Gypsum industries association of Chicago 698

H

Haber rights, French purchase of, approved by deputies ..... 323
HAFNIUM:
——Baby element expected ..... 469
——Samples coming to America ..... 515
——The new chemical element ..... 350
Halogen acids, process of producing (P.) 953
HARDENING:
——Surface oxidation during ..... 313
——Volume changes during ..... 353
Hardness testing, Elastic column dynamometer. Holz ..... 269
Hardness and hardening. W. Rosenhain.. 899
——Hardness of hard steel ..... 1118
Hardwood, Distillation of, in Canada .... 724
HEAT:
——British report on transmission of.... 321
——Carburizing, editorial comment .... 3
——Glass wool insulation ..... 1116
——Insulation, Research on ..... 629
——Reclamation of waste. Buell ..... 638
——Transfer calculation ..... 1077
HEAVY CHEMICALS:
(See also Week in Trade):
——Active movement in, absorbs domestic output ..... 699
——Healthy business prospects in..... 89
——Steady contract deliveries feature market for ..... 655
——Uniform sales contract for, editorial comment ..... 693
HELIUM:
——From Canadian natural gas ..... 497
——PLANT:
—— Navy department to have ..... 516
—— Goes West ..... 609
—— Explosion damages ..... 325
——To fill dirigible ..... 517

Hematite, Reduction of, by methane .... 592
High explosives for detonators (P.) .... 271
High vacuum, Methods of controlling electron currents in ..... 158
Hoover, Raw material survey planned by 418
Hot drawing on a mandril ..... 602
Hydraulic laboratory, National, urged by engineers ..... 155

HYDROCARBONS:
——Chlorinating (P.) ..... 366
——Separating asphalt and ozokerite from (P.) ..... 272
——Oils (B.P.) ..... 130

HYDROCYANIC ACID:
——Pure liquid (P.) ..... 510
——In fumigation, editorial ..... 709
Hydrofluoric acid, Purification of (P.) .. 129

HYDROGEN:
——Manufacture of (P.) ..... 822
——PEROXIDE:
—— (B.P.) ..... 320
—— (B.P.) ..... 367
——Process for the manufacture of compressed (P.) ..... 178
——Production of, by thermal decomposition of oil. Weaver ....764, 939, 1072
——Significance of industrial ..... 931

I

Idleness, How does, affect profits and selling prices? Mullaney ..... 531

IMMIGRATION:
——Editorial comment ..... 288
——Our problem of, editorial comment.. 50
——What shall we do about? ..... 327
Implied warranty, Breach of. Gustin.... 315

IMPORTS:
——At the port of New York.
—— 659, 703, 747, 792, 836, 880, 924, 966, 1009, 1052, 1096, 1140
——Cellulose, included in returns ..... 833
——CHEMICAL:
—— Increased 24% in value in 1922.. 782
—— February fall below January totals 958
—— Free list form major part of April imports ..... 1087
—— Russian far east restricts ..... 654
——COAL TAR:
—— At New York ..... 874
—— Dyes increase in May ..... 1047
—— Dye, Department of commerce hopes to collect figures ..... 882
—— Slow release may continue ..... 1132
Improved glass for industrial goggles.... 763
Incrustation, Preventing—and corrosion (B.P.) ..... 511
Indicators, Oxidation—reduction ..... 59

INDUSTRY AND TRADE:
——649, 693, 737, 781, 824, 869, 913, 956, 998, 1041, 1085, 1129
——Summary of Week in.
—— 649, 692, 737, 781, 825, 869, 913, 956, 998, 1041, 1085, 1129

INDUSTRIAL:
——Fellowships at Mellon Institute .... 626
——Developments 48, 95, 143, 191, 237, 285, 333, 429, 477, 525, 571, 619, 663, 707, 750
——Goggles, Improved glass for ..... 763
——Notes 144, 238, 526, 572, 708, 752, 883, 970, 1012, 1056, 1100, 1144
——Overexpansion, How can financiers prevent. Moltke-Hansen ..... 248
——Section 46, 94, 143, 196, 236, 284, 332, 380, 428, 476, 524, 570, 618, 662, 706, 750, 795, 839, 927, 969, 1011, 1055, 1099, 1143
——Situation in the Ruhr being studied by government ..... 278
——Stocks, Latest quotations on 878, 922, 964, 1006, 1050, 1094
Infringement of rubber patent comment.. 196
Inks and paints (B.P.) ..... 463
Inquiry, Begin nitrate soon ..... 782

INSECTIDE:
——Calcium arsenate supply adequate .. 39
——Research on ..... 629
Institute of Metals, Second lecture .... 442
——insulation, glass wool in Europe.... 1116

INTELLIGENCE TESTS:
——Editorial comment ..... 194
——For intelligence testers, comment .. 576
Interstate shipment. Gustin ..... 25
Interstate commission recommends lower feldspar and acid rates ..... 1132
Invar, Columnar crystallization in ingots of ..... 552
Iodine compound (P.) ..... 225
——Combine active ..... 1130

IRON:
——Alloys (B.P.) ..... 368
——Acid-resisting. Schenck ..... 678
——Ferric oxide absorbent gel (B.P.)... 511
——Ferric sulphate, Sulphuric acid from 253
——Ore produced in 1922 ..... 176
——Sponge ..... 267

IRON AND STEEL: (See also under Fatigue, Corrosion, Alloys)
**Corrosion and Prevention:**
——Corrosion-resisting. Aupperle ..... 681
——Corrosion of rust-proofed. Wood..... 769
**Foundry Practice:**
——Casting, Contraction and shrinkage during. Anderson ..... 254

IRON AND STEEL (Foundry Practice, Cont'd):
——Cast kettles. Boggess ..... 684
——Cast, Nickel and chromium in ..... 80
——See molding.
**Furnaces:**
——Acid open-hearth, Ingot defects in.. 508
——See under Blast Furnaces.
**Heat Treatment:**
—— ..... 1075
——At moderate temperature, comment.. 196
——Carbon, Influence of coaling rate on properties of ..... 502
——Case hardening plant of Timken Roller Bearing Co. ..... 578
——Case hardening practice ..... 1119
——Effect of temperature on the mechanical and microscopic properties of Priester and Harder, 111, comment 196
——Gages, Cooling ..... 1065
——New method for case hardening. Hodson ..... 308
——Surface oxidation during hardening.. 313
——Temperature control in—making .. 644
——Treatment of rock-drill..... 223
**Ingot:**
——Ingot practice for chromium ..... 553
**Physical Tests:**
——Castings, X-ray examination of. Lester ..... 261
——Elastic limits of fatigued ..... 820
——Hardness testing ..... 1118
——Secondary structures in. Belaiew.. 537
——Toughness at low temperature .... 1119
——Wear tests on ..... 551
**Processes:**
——Electric, Current practice in making 983
**Special Steels:**
——Effect of manganese on ..... 296
——Etching reagent for—containing chromium and vanadium ..... 497
——New constituent found in high-speed 164
——Silicon and chromium. The magnetic change $A_2$ in. Scott ..... 212
——Structure of chromium-nickel. Pulsifer and Greene ..... 354
**General:**
——Alloys, To make in Canada ..... 651
——Bars, contract resale of, etc. Gustin 175
——Cracking and bursting ..... 1119
——Dirt in, Comment....51, 149, 199, 482
——Effect of ammonia on ..... 551
——European attempts to number ..... 19
——Industry, Future of chemistry in—Bradley Dewey ..... 1030
——Institute meeting ..... 987
——Institute—Hot drawing on a mandril 602
——Making, future progress in. Editorial 971
——**Market:**
—— ..... 281
—— Advances in prices uniformly accepted ..... 473
—— Advancing .....329, 377
—— Continues active ..... 187
—— Steel market enters year with better prospects ..... 91
—— Labor shortage limits steel industry 567
—— Mills to operate at physical limits 281
—— Recovery in, editorial comment.. 2
—— Rumors of wage advances affect.. 615
—— Shows signs of excitement ..... 425
—— Production reaches record rates.. 521
—— Unusually active despite lower output ..... 139
——Numbering of, comment .....196 243
——Production breaks all records ..... 472
——What is?, comment ..... 290
Isotopes, Recent work on the separation of 115
Italy building celluloid industry..... 1131
——Eases export bans ..... 1137

J

Japan hoarding dyestuffs ..... 738

JOHNS HOPKINS:
——New laboratory planned for ..... 324
——To give course in gas engineering.... 871
Johnston, Prof. John, Stamford chemists hear ..... 467
Joints, pipe, Freezing or galling of threaded 80
Journal bearing, editorial comment..... 289
Journalism, editorial comment ..... 384

K

Kerosene fuels, Conduct research on..... 229
Kettles, Jacketed cast-iron. Boggess..... 684

KILN, LIME:
——Burning, rotary ..... 414
Kiln hoops ..... 1078
——(P.) ..... 177
Klipstein, Ernest C. dies ..... 831
Koppers Co. fellowship on coke..... 626

L

Lack of technical contact. Moltke-Hansen 248
Lactic acid, Pyruvic acid from. Smull and Subkow ..... 357
Langmuir patent again upheld. Gustin.... 314

LATEX (See Rubber)
Laundering, Industrial fellowship for... 628

LEACHING:
——Oxidized ores by $SO_2$ solution..... 362
——System, Develops ..... 612

LEAD:
——Ore (P.) ..... 557
——Pigments:
—— Gain in output of ..... 1001
—— Protective materials for the chemical engineering industries. Calbeck ..... 687
——Refining (P.) ..... 647
——Salts (B.P.) ..... 463
——Sulphate (B.P.) ..... 462
Leather manufacture, Art and science of. Seymour-Jones .....III, 200; IV, 400

LEGAL NOTES (See Gustin, Wellington):
25, 124, 125, 126, 175, 222, 268, 496, 730, 816, 1076
Leuco vat dyes (B.P.) ..... 82

LICENSE:
——Laws for engineers ..... 588
——Professional engineers, editorial comment ..... 574
Light magnesium carbonate, Research on. 629

LIGNITE:
—— ..... 698
——American, German brown coal compared with. Hood ..... 58
——Chars ..... 224
——Production and possibilities of char 864
——Utilization ..... 598

LIME:
——Air slaking. Rhodes, Jones and Dougan ..... 1066
——Chemical, Specifications for ..... 436
——Deposits, erosion cavities in..... 31
——In agriculture ..... 1113
——Industrial research on ..... 892
——Kiln (P.) ..... 177
——Loading ..... 546
——Quick setting plaster ..... 1113
——Manufacture, editorial comment .... 98
——National Association meeting ..... 1112
——Opening up new field for industry.. 1112
——Partition blocks ..... 1112
——Production statistics for 1922 ..... 386
——Research, An untrodden field in. Bowles ..... 447
——Rotary kiln, burning ..... 414
——SULPHUR:
—— Composition, soluble (P.) ..... 127
—— Concentrate ..... 407
——To get main efforts at non-metals station ..... 1088
——Utilization of waste ..... 909

LINSEED:
——Companies merge ..... 784
——Exports from India ..... 826
——OIL:
—— ..... 650
—— Heavy demand forces prices upward 654
—— Supreme Court holds crushers violate Sherman act ..... 1046

LIQUID:
——Carbon dioxide industry, a glimpse of the. Wikoff ..... 5
——Oxygen as an explosive ..... 374
——Purification process, Seaboard..909, 954
Lithopone, Effect of alkalinity on (P.).. 778
Lithuania, First glass factory in, completed ..... 436
Logwood, Haitien, U. S. largest buyer of 916

LUBRICATION:
——(P.) ..... 605
——Oils, Friction testing of. Herschel... 594
——Our broadening knowledge of. Dunstan and Thole ..... 299

M

Machinery for bagging superphosphates. Kai Warming ..... 893

MAGNESIA:
——As a polishing agent..... 441
——Compound ..... 576
——Manufacture of artificial spinel (P.) 865

MAGNESITE:
——Electrically sintered ..... 635
——Production increases in 1922..... 808

MAGNESIUM:
——Carbonate, Research ..... 629
——Function of, in fertilizer ..... 163
Magnets, A new material for permanent.. 645
Magnetic change, $A_2$, in silicon and chromium steels. Scott ..... 212
Maine offers paper courses ..... 1087

MANAGEMENT:
——Gage of purchasing efficiency ..... 1064
——How does idleness affect profits and selling prices? Mullaney ..... 531
——How does production affect profits? W. K. Lewis ..... 988
——Organization, the keynote of successful chemical production. Whitaker 104
——Reducing fire risks in chemical plants, editorial ..... 973
——Executive control of steam costs .... 777
——Unemployment and sales machine... 1070
Manager's viewpoint, buildings from..... 732
Manganese in 1922 ..... 64
Mangrove bark and extract, development of sources of supply for ..... 1003

MANUFACTURE:
——Of sulphuric acid and acid phosphates in 1922 ..... 728
——Of vitrified tile. Research on ..... 631

MANUFACTURERS' CATALOGS:
(SEE CATALOGS RECEIVED)

MANUFACTURING CHEMISTS' ASSOCIATION:
——Annual meeting ..... 1069
——Hold annual election ..... 1043
——Report submitted by carboy test, Committee to ..... 88
Markets in 1922, The chemical and allied ..... 41

MARKET CONDITIONS:
40, 89, 137, 185, 231, 279, 327, 375, 423, 471, 519, 565, 613, 655, 699, 743, 788, 832, 876, 920, 962, 1004, 1048, 1092, 1136
Marketing ideas, Comment ..... 530, 386
Massachusetts Institute of Technology, new furnace tested at ..... 697
——An engineering inaugural ..... 1060

MATCH:
——Industry in Poland ..... 1045
——Manufacturers form merger ..... 515
Materials for equipment construction, 676, Comment ..... 665
Mathieson Alkali earnings show big gains in 1922 ..... 520
Meat packers perfect development plans. 227

MECHANICAL HANDLING: (See also Equipment News.)
——Route your materials via air line. F. L. Jorgensen ..... 932
——Tractor and trailer transportation Putts ..... 1061
Mellon Institute, Research at, Wikoff... 625
Membrane equilibria, Chemists hear Donnan on ..... 727
Mennen Co. price policy upheld ..... 1087

MERCURY:
——Organic compounds (P.) ..... 605
——Thermometers, easy reading ..... 805
Mergers of manufacturing companies, completed and in prospect ..... 696

METAL:
——Alloy, for high temperature. Fahrenwald ..... 680
——Bearing, a study of. Bierbaum .... 304
——Corrosion of, by refrigeration, brine.. 645
——Dirty, Fatigue resistance of ..... 222
——Endurance of, Comment ..... 481
——Extracting (P.) ..... 605
——Fatigue of ..... 553
——Gases in ..... 1069
——Heated, electron emission from .... 69
——Hydrates, Production of, and gas, including acetylene. (P.) ..... 603
——Industry, French ..... 650
——Inquiry, Congress starts ..... 514
——Lehigh test to develop strain measure 961
——Specifications, government standardizes 560

METALLIC:
——Compounds, cored crystals and. Bain 65
——Powders, production of. (P.) .... 272

METALLURGY: GENERAL ONLY
——Crystallization or poor heat treatment? ..... 1075
——Fatigue in metals ..... 811
——Meeting of Iron and Steel Institute.. 987
——Non-metals experiment station opened by mines bureau ..... 957
——Technical education in. Hayward.. 599
Meter, gas-flow. (P.) ..... 646

METHANE:
——(B.P.) ..... 367
——Chlorinating (B.P.) ..... 129
——Reduction of hematite by ..... 592

METHANOL:
——Increased production of ..... 915
——Officially adopted for alcohol nomenclature ..... 180, 808
——Production of, declined in February.. 695
Methods of air drying, Holden ..... 801
Midgley, Thomas, Jr., awarded 1923 Nichols medal ..... 229

MINERAL:
——Fillers, investigation of ..... 550
——Production in Canada in 1923 ..... 546
——Production in Ontario ..... 488
Miscellaneous materials, see under Market Conditions.
Modern tar distillation plant, Huff..... 720
Modification of aluminum-silicon alloys, Comment ..... 624

MOLDING SANDS:
—— ..... 358
——Conservation of ..... 1025
——Testing of ..... 1120
Molybdenum source found ..... 561

MONEL METAL:
——Gas in ..... 713
——Nickel and. McKay ..... 686
Money, To borrow from a bank, what must a corporation do? Wadsworth 758
Moore, R. B., Goes into industry ..... 886
Moroccan phosphate may rival Florida deposits ..... 653, 742

MOTOR FUEL:
——(B. P.) ..... 81, 463, 130, 274
——Development encouraged by France .. 651
——French consider compulsory use of alcohol ..... 135
——Symposium, gas and fuel section of A.C.S. plans ..... 277
Motor, heavy duty ..... 642
Movement of fertilizers, good car service for movement of ..... 739
Movies, educational, made by U. S. Bureau of Mines ..... 606
Mundacizing, Research on ..... 630
Murray Tire Co., South starts tire making 468

MUSCLE SHOALS:
——Disposal discussed anew ..... 275
——Fertilizer man attacks Ford offer .. 134
——Representative favors Ford offer ..... 322
——Tell Ford yes or no, Sentiment of Senate ..... 373
——To fight in defense of water-power act ..... 373

N

NAPHTHALENE:
——Improved hydrogenation of (P.)..... 273
——In gas, Determining (P.) ..... 415
——Purification of (P.) ..... 272
National Association of Chemical Salesmen hold alkali dinner ..... 563

NATIONAL CAMPAIGN FOR BOLL WEEVIL CONTROL:
—— ..... 469, 417
——Elects officers ..... 513
——Fight is on ..... 561
National conference of business paper editors visit capitol..... 181
National defense, Chemistry fundamental to ..... 38
National Fertilizer Association plans annual convention ..... 37
——Convention report ..... 1105
National Fire Protection Association; prevent dust explosion hazards ..... 419

NATIONAL LEAD CO.:
——Negotiates for St. Louis plant.... 1045
——Reports big earnings ..... 520

NATIONAL RESEARCH COUNCIL:
——Compiles useful data on "Where to buy" ..... 371
——Constants meeting held ..... 611
——Makes survey of scientific activities in U. S. ..... 561
——Provides informational bulletins.... 810
——To hold winter meeting ..... 560
Natural gas resources, editorial comment. 194
Nature of solid solutions, Bain..... 576

NAVAL STORES:
——Alabama exporting large amounts of pitch ..... 919
——Data sought ..... 651
——Export corporation requests charter 516
——Fixing standards for ..... 565
——Production, Demonstrates improved.. 562
——Prohibition of exportation of..... 650
——Rosin, Smaller carry-over into next year ..... 957
——Standards, New law establishes.... 469
——U. S. largest producer and consumer of ..... 784
Negru, a protest on, comment ..... 243
Neodymium oxide, decolorizing acidic borosilicate glasses with ..... 865

NEW COMPANIES:
——48, 90, 192, 286, 334, 382, 430, 478, 525, 571, 620, 664, 708, 751, 796, 840, 884, 928, 970, 1012, 1056, 1100, 1144

NEW JERSEY CHEMICAL SOCIETY:
——Hears Chamot and Herty ..... 184
——Hears prominent speakers ..... 562
——Meets ..... 421
New Jersey third state in clay production 374

NEW PUBLICATIONS (Books, Pamphlets etc.): 144, 192, 238, 807, 911, 955, 1128
New South Wales shale oil industry fails. 607
New type vertical retort ..... 772
New use for salt and sodium arsenate.... 789
New York Chemists' Club holds annual election ..... 870
New York Market.....42, 90, 138, 186, 232, 280, 328, 376, 424, 472, 520, 566, 614
Newfoundland, Increase paper output in. 470
News Notes.....698, 742, 786, 829, 871, 917, 958, 1002, 1043, 1091, 1131
Newsprint pitch troubles in paper mills, Barnes ..... 503
Nichols medal awarded to Thomas Midgley, Jr. .....229, 485

NICKEL:
——(B.P.) ..... 367
——Alloy (P.) ..... 415
——Oxide, Revivifying (P.) ..... 604
——AND MONEL METAL:
—— McKay ..... 686
—— Research on ..... 630

NITRATE:
——Advocate lower freight rate on .... 1133
——Begin inquiry soon ..... 782
——Chilean for fertilization in Germany.. 134
——Chilean, for sale ..... 88
——Finds refining process..... 790
——German, To take on reparation account ..... 890
——Head of survey named ..... 830
——House approves federal sale of..... 322
——Increased movement of, to this country ..... 653
——May be sold to farmers at cost.... 275
——Natural, reserves of ..... 972
Nitro compounds, reduction of (P.)..... 823

NITROCELLULOSE:
——Artificial silk from (P.) ..... 462
——Composition (P.) ..... 569
——Reclaiming from pyro smokeless powder (P.) ..... 128
——Solvent, Ammonia as (P.) ..... 128

NITROGEN:
——Again to the fore ..... 841
——Distribution in vertical retorts..... 507
——Fixation, Economic status of, in Germany. Daugherty ..... 62
——Fixation ..... 1072
——Oxide vapors, Recovery of (P.) .... 462
Norway to hold industries fair ..... 611

O

OBITUARY:
——39, 88, 184, 278, 326, 374, 422, 470, 517, 564, 612, 648, 736, 780, 824, 868, 955, 997, 1049, 1084, 1128
——Booream, John Van Vorst ..... 997
——Borgner, Cyrus ..... 422
——Britton, Everett C. ..... 326
——Brady, William ..... 824
——Brown, George Elliot ..... 278
——Carr, Clyde Mitchell ..... 1084
——Cochrane, David ..... 326
——Cotten, Elmer A. ..... 736
——Decrow, David Augustus ..... 470
——Dewar, Sir James ..... 648
——Frank, J. Emil ..... 736
——Frerichs, William D. ..... 997
——Head, James T. ..... 470
——Herold, John J. ..... 780
——Hilton, Robert W. ..... 374
——Hinrichs, Gustavus Detlef..... 648
——Kraus, Lysis R. ..... 374
——MacNeill, Charles M. ..... 648
——Miller, Albert H. ..... 184
——Monto, Charles Philip ..... 470
——Morley, Edward Williams ..... 564
——Randall, Frederick Bennett ..... 517
——Ransom, Lewis E. ..... 612
——Röntgen, William Konrad ..... 736
——Salathe, Dr. Frederick ..... 868
——Schnorienberter, Paul ..... 1128
——Seaman, H. J. ..... 374
——Stallman, Arthur C. ..... 374
——Shoff, Ira A. ..... 518
——Smothers, Wall Edward ..... 612
——Stock, Harry Harkness ..... 517
——Taylor, Wade A. ..... 470
——Walker, William R. ..... 88
——Ward, John Gilbert ..... 868
——Waugh, William P. ..... 278
——Wells, Charles F. ..... 1128
——Wheeler, S. S. ..... 780
——Worth, William Penn ..... 422

OIL:
——(B. P.) ..... 81
——Corporation, Huston resigns to head.. 560
——Cottonseed consumption in May .... 1129
——Disposal method, Would give prize for 611
——Distillation, light shed on ..... 892
——Edible, What real co-operation can do for the industry ..... 545
——El Dorado field in Arkansas ..... 577
——Emulsions (B.P.) ..... 82
——Friction testing ..... 594
——Linseed companies merge ..... 784
——Lubricating, Friction testing of. Herschel ..... 594
——Move to reconsider duties on draws protest ..... 783
——OLIVE:
—— Denaturing rule revised ..... 609
—— Foots hearing is extended ..... 468
—— Ruling is made public by treasury. 559
——Oxidized, Engine experiments with. Zeisenheim ..... 848
——Production of hydrogen by decomposition of. Weaver....764, 939, 1072
——Reclamation of used petroleum lubricating ..... 508
——Refineries as public utilities ..... 371
——Salvages in industry ..... 938
——Sludges, Carnegie Tech. working on. 958
——Soya bean, Drawback allowed on refined ..... 1001
——Suit starts ..... 1131
——Treatment (P.) ..... 318
——VEGETABLES AND FATS:
——See under Market Review:
—— Mills oppose move to lower duties. 654
—— Residues used in Netherlands soap trade ..... 1133
—— Western railroads can't lower rates on ..... 654
——Viscosities, A slide rule for ..... 126
——Well, Mammoth, found in Venezuela 515
——Well in a graveyard, comment ..... 198
——World situation ..... 729
Oiliness, Testing—by friction-testing machines. Herschel ..... 302
Oleomargarine, Canada prohibits manufacture ..... 1086
Orchards, Will smoke protect? ..... 792
Ore, Resistance of flow of, through beds of solids ..... 536

ORGANIC:
——Chemical production gains 177% in 7-year period ..... 740
——Chemistry, Definition of, editorial comment ..... 193
——Compounds (P.) ..... 33
Organization, the keynote of successful chemical production. Whitaker.. 104
Orthosulphonic acids of aromatic amines, Manufacture of (P.) ..... 556
——Outlook for industry ..... 325
Ovens, Materials for furnaces and..... 79
Oxalates, Converting formates into (P.). 509
Oxalic acid, Preparing (P.) ..... 778

Oxides, organic, Manufacture of (P.).... 734
Oxidized oils, Engine experiments with. Zeisenheim ..... 543
Oxygen, Manufacture of (P.) ..... 822
Ozone process, production of synthetic vanillin by. Wood ..... 806

P

PAINT:
——Calbeck ..... 687
——Adopt standards for ..... 790
——Composition of matter for roof (P.) 823
——Concern restrained on misbranding charge ..... 324
——MANUFACTURERS' ASSOCIATION:
—— Makes known activities—..... 563
—— Federal jury to investigate..... 468
—— Not indicted ..... 517
——Microstructure of films. Maxwell... 850
——H. D. Ruhm to head New York Club 786
——Noncorrosive paint (P.) ..... 953
——Production ..... 724
——Pyroxlin enameling composition (P.) 954
——Special paint containing rubber (P.) 953
——And inks (B. P.) ..... 463
——And rubber pigments, Microscopy of. Green ..... 53
——And varnish industry in 1921 and 1922 ..... 186
Palladium alloy, Chemical use of. Gustin 362

PAPER AND PULP:
——(B.P.) ..... 908
——Arghan—A new fiber ..... 991
——Bleaching tank (P.) ..... 1039
——Compound for rendering greaseproof (P.) ..... 779
——Cost of de-inked newspaper..... 1034
——Courses offered by U. of M. ..... 1087
——De-inking (P.) ..... 273
——Eighth annual meeting of T.A.P.P.I. 727
——Forest products research carried on by Canada ..... 768
——Hammermill offers fel'owship ..... 1088
——How to improve production—Superintendents' convention ..... 1033
——Increase in newsprint production in Canada ..... 440

——INDUSTRIES EXPOSITION:
—— Announces speakers ..... 469
—— Program announced in detail .... 651
—— Wide interest in ..... 183
—— Summary ..... 726
—— Editorial ..... 709
——Industry, Canadian, Growth of ..... 78
——Looking to the future of the paper industries, editorial ..... 1013
——Making, Properties of wood in. Bjarne Johnsen and H. N. Lee..... 257
——Making, Pulped currency used for... 560
——Method to use lignin (P.) ..... 1039
——MILL:
—— British interests investigate Canada as site for ..... 228
—— Canadian, increase operations ..... 87
—— Plan expansion ..... 277
——Output in Newfoundland ..... 470
——Pitch troubles in newsprint mills. Barnes ..... 503
——Plans for research announced ..... 999
——Plant expansion keeps pace with water-power development ..... 183
——Recovery of converted stock ..... 994
——Process for treating-mill waste (P.) 646
——Pulp industries, Reforestation for.. 514
——Pulp process (P.) ..... 907
——Rubber latex in ..... 414
——School, Canada provides ..... 651
——Screen for converted stock (P.) .... 1039
——Sizing composition (P.) .....866, 995
——Strength in markets ..... 915
——Sulphur-free lye used for orderless manufacture of pulp ..... 506
——To remove odor from sulphate pulp (P.) ..... 1039
——Wall—Manufacture in a model mill 437
——World production ..... 644
——Wood tanks in industry. Long.... 677
Paraffin, demand in Vera Cruz ..... 1003
Pasteur, Public meeting planned in honor of ..... 181

PATENT:
——Office, editorial comment ..... 383
——REVIEW OF RECENT:
—— 32, 81, 128, 177, 224, 271, 317, 366, 415, 461, 509, 555, 603, 646, 734, 777, 822, 865, 907, 952, 994, 1033, 1082, 1125

——BRITISH PATENTS:
—— 81, 129, 178, 225, 319, 367, 463, 511, 557, 605, 866, 908
——Validity of. Gustin ..... 25
——And the problem of priority ..... 356
Paterno, Professor, honored ..... 516
Peat, Character and uses of ..... 365
Perchlorate explosives (P.) ..... 225
Perkin medalist, Milton C. Whitaker....97, 100
Perkins glue patent not infringed. Gustin. 124, 458

PERSONAL (Men in the Profession):
——39, 88, 136, 184, 230, 278, 326, 374, 422, 470, 518, 564, 612, 648, 736, 780, 824, 868, 912, 955, 997, 1040, 1084, 1128

PETROLEUM:
——April output is greater than consumption ..... 1000
——Desulphurizing (B. P.) ..... 368
——EMULSIONS:
—— Dehydration of (P.) ..... 318

PETROLEUM (Emulsions, Continued):
—— The Resolution of. Dodd ..... 249
——Industry, A year of new records in.. 137
——Products, Distribution of sulphur in. Egloff and Morrell ..... 633
——Production, perils in ..... 1111
——Refining gains 335.8 per cent in 7 years ..... 533
——World output shows increase in 1922. 512

PHENOL:
——Bakelite production soon available. 784
——Purification of liquors containing (P.) 272, 319
——Synthetic, Why produce? ..... 824
——Vapor, Recovery of (P.) ..... 318
Phenylglycerine (B.P.) ..... 511
——Manufacture of (P.) ..... 555
Philadelphia chemical club plans course for salesmen ..... 371

PHOSPHATE ROCK:
——American, shut out of the Ruhr.... 695
——Competition from. Moroccan ..... 653
——Gains attention ..... 698
——Moroccan may rival Florida deposits 742
——Shipments in 1922 ..... 1000
Phosphorus, Manufacture of (P.) ..... 461
Pickling (P.) ..... 647
Picric acid manufacturers subject to tax. 760

PIGMENTS:
——Green (P.) ..... 33
——Microscopy of paint and rubber. Green 53
Pipe joints, Freezing or galling of threaded 80
Pitch troubles in newsprint paper mills. Barnes ..... 503

PLANT NOTE BOOK:
—— ..... 1077
Plant construction, Wood pipe in. Smith.. 677
Plastic compositions (P.) (B.P.)....556, 367

PLATINUM:
——In 1922 ..... 59
——Thermocouples, Constancy of ..... 488
Poland, Production of alcohol in ..... 437
Polishes, Varnishes and (P.) ..... 605
Porcelain, spark plug, Manufacture of. Wikoff ..... 150
Portland cement association, editorial.. 710

POTASH:
——Alcohol interests to produce ..... 792
——Alsatian output increased in 1922 .. 695
——Eastern corporation in hands of receiver ..... 180
——Exploration, Limits Alsace ..... 516
——GERMAN:
—— Industry. Daugherty ..... 205
—— Industry not dependent on Ruhr coal ..... 783
—— New corporation to sell ..... 137
—— Output in 1922 a record ..... 1042
—— Prices higher in May ..... 739
—— Production at minimum capacity. 957
——Importing corporation of America ... 181
——Liquor, Recovery of waste (P.) ... 556
——Recovery of, from distillery waste (P.) ..... 510
——Salts, Higher quotations feature New York market ..... 614
——Search for ..... 761
——To stimulate use in fertilizers ..... 783
Potassium sulphate, Manufacture of (P.) 735

POTTERY:
——Ca'ifornia uses own material in making ..... 651
——Men face trial ..... 608

POWDER:
——Producing fine (P.) ..... 415
——Smokeless (P.) ..... 366

POWER:
——Developments proposed for south... 999
——Supply, editorial comment ..... 573
Precipitation, Electrical, of flocculent material (P.) ..... 646
Precision balances, Spontaneous changes in 506
Press cake, Composition of beet sugar.. 587
Preventing dust fires and explosions. D. J. Price ..... 902

PRICES:
——Change, Chemical, during January.. 327
——Current in New York market....44, 92, 140, 141, 188, 234, 252, 330, 378, 426, 474, 522, 568, 616, 660, 704, 748, 793, 837, 881, 925, 967, 1009, 1052, 1097, 1141
——Recent trend of ..... 89
——Rising and production costs accompany greater industrial activity ... 471
——Wholesale, rise in February ..... 614
——Upward trend of chemical ..... 737
Princeton, Increase in science department students at ..... 69
Procter and Gamble suit dismissed .... 791

PRODUCTION:
——How does it affect profits? W. E. Lewis ..... 988
——Costs, Rising prices and, accompany greater industrial activity ..... 471
——Hydrogen by the thermal decomposition of oil. Weaver ...764, 939, 1072
——Synthetic vanillin by the ozone process. Wood ..... 806
——STATISTICS:
—— Acid phosphates in 1922 ..... 728
—— Activity, Better business conditions are the result of increased.... 613
—— Alkali industry ..... 593
—— Aluminum ..... 986
—— Magnesite in 1922 ..... 808

Profits, Increasing without increasing sales ..... 637
Propyl alcohol, An interesting note on.. 365
Protecting fur and wool (P.) ..... 33
Protective materials for the chemical engineering industries (lead pigments). Calbeck ..... 687
Protest from Germany, editorial comment 289
Phthalic anhydride, Method of making (P.) ..... 556
Public education, editorial comment..... 432
Publications reviewed by Chem. & Met... 601

PULP, see PAPER:
Pulpwood ..... 650
Pulsations in gas flow ..... 776
Pump, ball bearing, self priming ..... 730
Pump valves ..... 1079
Pump, a new chemical ..... 1123
Purchasing efficiency, A gage of ..... 1064
Pyrazolone dyes (B. P.) ..... 82
Pyrex, Industrial. Marshall .....216, 690
Pyruvic acid from lactic acid. Smull and Subkow ..... 357
Pyrites output in 1921 ..... 1033

Q

Quarry operators should apply engineering principles ..... 296
Quencher, New automatic furnace and .. 642
Quicksilver, Some notes on ..... 635

R

Radio, Principles in induction, heating.... 815
RADIUM:
——Company cited for fraudulent advertising ..... 181
——Production, fused silica in. Viol ... 602
Rails, Wear on ..... 645
Rain-making scheme, Bureau of Mines reviews ..... 517
Ramsay, Largest memorial fund to honor 87
Raw material survey planned by Hoover.. 418
Raw rubber, Treatment of (P.) ..... 735
Receptacles, Building, of vulcanized fiber. Bell ..... 688
Reclaiming rubber,, alkaline process (P.). 124
Recompression, vapor, systems for evaporators. Badger .....26, 73
Records, Economy ..... 774
Recording gas colorimeter ..... 777
Recovery of sulphur (P.) ..... 82

RECTIFICATION:
——Fundamentals of, editorial comment 195
——Of binary mixtures. Van Nuys..207, 255
——Liquid feed at an intermediate level. Van Nuys ..... 311
——Methods of operating which affect limiting composition of. Van Nuys 359
——Conditions for reversible rectification. Van Nuys ..... 408
Reducing losses in galvanizing, Research on ..... 630
Refining process for nitrate, Finds..... 790
Reforestation only hope of future pulp supply ..... 610

REFRACTORY:
——(P.) ..... 510
——Burning ..... 397
——Investigation begins ..... 517
——Merger looms ..... 740
——Mortar, requirements of ..... 1080
——Research ..... 831
——Standardization looms in steel industries ..... 960
——Tests from high temperature..... 732
Reforestation for paper pulp industries.. 514
READERS' VIEWS AND COMMENTS:
4, 148, 196, 197, 242, 290, 338, 386, 434, 482, 530, 576, 624, 712, 756, 800, 844, 906, 1037, 1081
Refrigerating solution, non-corrosive (P.) 462
REPARATION DYES:
——No action on, as Congress quits.... 465
——Resold in U. S. by Italy ..... 517
RESEARCH:
——Arsenic production ..... 653
——Comment ..... 4
——Commercial application of acetone and methanol ..... 631
——Corrosion ..... 627
——Fatigue resistance ..... 892
——Gelatine ..... 4
——Forest products, carried on by Canada 768
——Information service ..... 72
——Laboratory, Standard Steel Car Co. Rimbach ..... 110
——Lime an untrodden field in. Bowles 447
——Magnesium carbonate ..... 629
——National council provides informational bulletins ..... 810
——Problems in electrochemistry ..... 256
Resins, synthetic. B. P. .....274, 273
Resin, new, found in Mexico ..... 1089
Resistance of flow of ore through beds of solids ..... 537
Retort, vertical, new type ..... 772
——Low temperature (P.) ..... 1082
Road tar specifications ..... 601
Rochester section, A. C. S. secures Svedberg for symposium on physical chemistry ..... 88
Roofing and siding materials, what is required of ..... 245
Rose, Charles A., Biographical sketch ... 888
Rosengarten, Frank N. dies ..... 870
Rosenhain, Walter, addresses Institute of Metals .....442, 1027
Rossen, Geo. to head produce exchange.. 984

RUBBER:
——Accelerator (P.) ..... 777
——Alkaline process for reclaiming. Gustin ..... 124
——Chemists hold successful meeting at New Haven ..... 727
——Colombia and Brazil resources ..... 650
——Consumption in Germany falls off sharply ..... 1050
——Conversion of (P.) ..... 33
——Crude, investigate foreign control of. 961
——Editorial comment ..... 383
——Export association to handle commodities ..... 563
——Industry, a possible revolution in .. 127
——Infringement of patent, Comment... 196

——LATEX:
—— ..... 127
—— Forges to front ..... 790
—— In paper making ..... 414
——Lined container (P.) ..... 1038
——Malay exports grow despite drawbacks 559
——Pigments, microscopy of paint and. Green ..... 53
——Planters confer with manufacturers.. 182
——Preparation of solid preservative for latex (P.) ..... 822
——Presents American view of situation. 609
——Process and apparatus for treating. (P.) ..... 319
——South starts tire making ..... 468
——Sundries trade, present situation in.. 364
——Treatment of waste (P.) ..... 866
——Trouble continues ..... 563
——Urges, growing in Philippines ..... 878
——Vulcanization (P.) ..... 128, 366
Ruhm, H. D., elected president N. Y. paint club ..... 786, 873

RUHR:
——American buyers may obtain export licenses in ..... 918
——American phosphate rock shut out of.. 695
——CHEMICAL:
—— Plants in ..... 341, 418
—— Products from, cut off by occupation ..... 321
——Double duties hamper trade with... 465
——Editorial comment ..... 385
——Export situation ..... 698
——Extend time for filing export licenses in, trade ..... 878
——France lifts double duty ..... 563
——Industrial situation is being studied by government ..... 278
——Licenses must be applied for before July 1 ..... 1135
——Occupation hurts East ..... 467
——Text of order authorizing sale of American-owned goods ..... 1130
——What is in the ..... 339
Rules concerning imported dyes ..... 229
Rust-proofed iron and steel, corrosion of. Wood ..... 769

S

ST. LOUIS MARKET:
—— 90, 138, 233, 328, 424, 520, 615
Safety engineering meeting announce program ..... 228
Sagger problems being investigated ..... 10
Safety code for walkways urged ..... 422

SALES:
——Contract, Uniform, for heavy chemicals, editorial comment ..... 693
——Increasing profits without increasing. 637
Salesmen's Association of the American Chemical Industry ..... 85, 694
Saline solutions free from colloidal silica (P.) ..... 462
Salts, Canadian prairie provinces yielding commercially valuable ..... 609
Sand-lime brick association holds annual meeting ..... 416
Schrader roofing patent invalid. Gustin... 496
Schwab, Charles M., editorial comment.. 145
Scleroscope, New model ..... 316
——Comment ..... 483
Seaboard liquid purification process.. 909, 954
"Sealite" rights, Corn products acquires.. 325
Seaman, H. J., A pioneer passes ..... 435

SEAMS:
——Riveted, Six kinds of ..... 679
——Welded, Thum ..... 679
Search for potash ..... 761

SELENIUM:
——Chloride used for activating carbon.. 183
——Oxychloride as a solvent (P.) .... 556
——Oxychloride cleans cylinders ..... 849
Selling prices, How does idleness affect profits and? Mullaney ..... 531
Separation of dust from gases (P.) ..... 32
Sesqui-centennial celebration in Philadelphia planned by engineers ..... 136
Sewage disposal (B. P.) ..... 129
Shoe manufacturing industry, what chemical technology has done in. Lovell. 715
Shovel, Gasoline ..... 774
Shipping documents, specific penalties for loss of ..... 916

SILICA:
——FUSED:
—— In radium production. Viol ..... 692
—— Use of. Tyler ..... 692
——What is the life of, gel? ..... 805

SILICATE:
——Of soda in the ceramic industries. Vail 636
——Treating (B. P.) ..... 511
Silico-thermy, and its practical application ..... 554

SILK:
——ARTIFICIAL:
—— (B. P.) ..... 319
—— (P.) ..... 317, 647
—— From nitrocellulose ..... 462
—— Progress in Germany ..... 4
——Research, Yale to do ..... 559

SILVER, see also under GOLD:
——Chloridizing ores ..... 938
——Ore (P.) ..... 557
——Tarnish on ..... 593
Sink outlet ..... 730
Sisal inquiry ..... 650
Slide rule for oil viscosities ..... 126
Slag substitute for magnesite (P.) .... 1125

SMOKE:
——Precipitation apparatus (P.) ..... 1039
——Will it protect orchards? ..... 792
Smokeless powder, Reclaiming nitrocellulose from (P.) ..... 128

SOAP:
——(B. P.) ..... 368
——Antiseptic (B. P.) ..... 273
——German trade depressed ..... 1047
——Gives fund for study ..... 742
——Going into Cuba ..... 650
——Manufacture of, in 1921 ..... 260
——Metallic, Industrial importance of. Jones ..... 489
——Naptha, Dispute, unfair sales practice charge ..... 1043
Société de Chimie Industrielle honors Pasteur ..... 85
Society of Chemical Industry, Perkin medal ..... 97, 100

SODIUM:
——Arsenate, new use for ..... 789
——Chloride, new use for ..... 789
——Deposits, African Co. has large .... 1089
——Hydroxide, shortage in Germany.... 1000
——Salts (B. P.) ..... 463
——Sulphate, production of (P.) ..... 32

——SULPHIDE:
—— Manufacture, Problems in, comment ..... 49, 199, 290, 338, 530
Solder for aluminum ..... 776

SOLID SOLUTIONS:
——The nature of ..... 21
——Comment ..... 577
Solidifying materials (P.) ..... 510
Soluble resins, Production of, from furfural (P.) ..... 556
Solvent, Apparatus for recovery (P.)..... 177
Sorby lecture, Second ..... 497
Sorghums, grain, New uses for ..... 110
Southern Fertilizer Association meeting. 1105
Spain excludes U. S. from favored import rates ..... 916
Spark plug porcelain, Manufacture of. Wikoff ..... 150
Special Libraries Association, annual convention ..... 611
Sponge iron ..... 267
Springfield, Gas explosion wrecks plant.. 277
Stafford process of wood-carbonization.. 441
Stamford Chemical Society ..... 467
Standard, Purpose of, comment. Cohoe... 577
Standard Oil Co. will offer technical training to employees ..... 84
Standard prices, Problem of main training. 565
Standard Steel Car Co., Research bureau laboratory. Rimbach ..... 110
Standardize scientific symbols, A.E.S.C. to 514

STANDARDIZATION:
——Coal tar strength in imports ..... 783
——Conference dates changed ..... 1044
——For paint, adopted ..... 790
Statistics, editorial comment ..... 147, 194

STEAM:
——Accumulator. Ginsberg ..... 809
——Costs, executive control of ..... 777

STEEL, SEE IRON AND STEEL:
Steel treaters nominate ..... 1091
Steel treaters meet at Bethlehem..... 1119
Stenches, Removing by activated carbon. 1115
Stills. Thum ..... 679
Stirrer efficiency ..... 1077
Sterling chemical laboratory of Yale University ..... 387
Stockholm College, Large new laboratory dedicated at ..... 84
Stone ware, Chemical, and its applications. Knight ..... 689
Stoughton, Bradley, to join Lehigh staff.. 957
Strain and fracture in metals ..... 1027
Stratton, S. W., President of M. I. T. inaugurated ..... 1086

SUGAR:
——Beet press cake composition ..... 587
——Cane, Manufacture of ..... 457
——Industry, Proposed regulations to prevent dust in ..... 419
——Purifying cane juice (P.) ..... 994
——Record crop in Hawaii ..... 551
——Refining in Bulgaria ..... 440
——Thomas and Petree process of clarification in Hawaii ..... 365
——Trend of world production and consumption of ..... 446
Sulphates, Process for making (P.) .... 647

SULPHITE:
——Cellulose liquors, Treatment of (P.) . 604
——Waste liquor, Increasing emulsifying properties of (P. ) ..... 603

SULPHUR:
——Agreement between American and foreign producers ..... 563, 828
——Burning (P.) ..... 1038
——Burner (P.) ..... 908
——Debts, Italy liquidates ..... 608
——Deleterious effects of, in oil. Egloff and Morrell ..... 633

——DIOXIDE:
—— Action of gas on nickel-chromium alloys ..... 976
—— In coal mining ..... 52
——Distribution of, in petroleum products. Egloff and Morrell ..... 633
——Duty, Australian, favors Britain.... 513
——Industry of the world ..... 459
——Is the market stable? A. G. Wolf.. 1031
——Italian production ..... 1044
——Methods of determining. Egloff and Morrell ..... 633
——Producers in U. S. make bid for export trade ..... 39
——Production ..... 390
——Prohibitive tariff for Spain proposed 1132
——Recovery of (P.) ..... 82
——Reduction in tax ..... 1042
Sulphuretted hydrogen - desulphurizing gases (B. P.) ..... 129

SULPHURIC ACID:
——Fertilizer industry consumes the largest quantity of ..... 353
——From ferric sulphate ..... 253
——Long-distance hauling of, no longer feasible ..... 338
——Manufacture in 1922 ..... 728
Superphosphates, Machinery for bagging. Kai Warmung ..... 893
Svedberg, Colloid symposium in June..... 35, 86, 608
Swedish industry getting on its feet.... 1042
Swiss, the, dye industry ..... 782

SYNOPSIS OF RECENT LITERATURE:
——80, 127, 223, 224, 317, 365, 414, 460, 507, 553, 644, 732, 776, 820, 863, 909, 954, 998
Synthetic Organic Chemical Manufacturers Association at annual meeting hear Herty and Garvan ..... 513

T

TALC:
——Notes on ..... 761
——Production of, in Canada ..... 344
——Powdered, Electrical insulators from (P.) ..... 1126

TANKS:
——Thum ..... 679
——Effect of chemical solutions on various woods used in. Hauser and Bahlman ..... 159
——New quenching ..... 316

TANNING:
——(P.) ..... 605
——Extract manufacture. Seymour-Jones ..... 202
——Procedure. Seymour-Jones ..... 203

TAR:
——Coal, Distilling in Europe ..... 461
——Creosotes, properties and tests of ... 358
——Distillation plant, a modern ..... 720
——Lubricant from (P.) ..... 735
——Refined—for coating cast-iron pipe fittings. Church ..... 447
——Sands, Canadian, development work on ..... 36

TARIFF:
——Act of 1922 and the chemical industries. [Taussig.] ..... 210
——Amino acids and rare sugar said to need more protection ..... 1089
——BOARD:
—— May compile import and export statistics ..... 1001
——CHEMICAL:
—— To investigate basis for changes in 376
—— Production figures coming soon .. 612
—— To study ..... 558
——COMMISSION:
—— Coal-tar survey being made by .....653
—— Considers foreign organization .... 960
—— Splits on flexible plan ..... 514
—— Studies foreign discrimination ... 514
——Creolin pearson duty ..... 960
——Delivered weights to govern import duties ..... 1044
——Duty on olive oil foods ..... 468
——Flexible provisions ..... 238
——Investigation organized ..... 650
——LAW:
—— Editorial comment ..... 99
—— Methods of operating flexible provisions of ..... 738
——Lower duties asked for linseed oil, cresylic acid and phenolic resin.... 874
——Move to reconsider duties on oil draws protest ..... 783
——Problems, editorial comment..... 195
——Regulations for the entry and appraisement of dyes issued ..... 466
——Revision, Announce applicants for .. 609
——Rules, proposed dye ..... 416
——Seeking more import data ..... 610

TARIFF (Continued):
——Surcharge rates for duties paid in Spanish currency ..... 1001
——TREASURY:
—— Retains calcium arsenate on dutiable list ..... 870
—— Upholds duty on cresol ..... 745
——Would make Goldsmith chief investigator ..... 827
"Tarpentine" is unfair name for turpentine substitute ..... 695
Taussig, The tariff act of 1922 ..... 210
Taylor society. Unemployment and sales machine ..... 1070
Tax-free security, editorial comment.... 431
Technical Association of Pulp and Paper Industry .....698, 725

TECHNICAL:
——Developments in British chemical industries ..... 714
——Education, Is public ready for? .... 37
——News of the Week (See Industry and Trade) 34, 83, 131, 179, 226, 275, 321, 369, 416, 465, 512, 558, 606
——Purchasing of raw material, importance of ..... 637
——Schools, value of commercial training in ..... 9
——Testimony in patent suits; comment 197
——Training, Standard Oil Co. will offer to employees ..... 84

TEMPERATURE:
——Control in steel making..... 644
——Effect of, on the mechanical and microscopic properties of steel. Priester and Harder ..... 111
——High, metals for. Fahrenwald.... 680
Testing materials meeting plans announced 828
Tests for high temperature refractories. 732
"Therm" charges for gas ..... 733
Thermolith cement ..... 643
Theoretical derivation of the vapor curve of xylol; comment ..... 339
Thermometer, easier reading mercury.... 805
Thymol, synthetic (B.P.) ..... 129
Thomas and Petree process of sugar clarification in Hawaii ..... 365

THOMPSON, SIR J. J.:
——Editorial ..... 755
——Visits G. E. ..... 741
Timber, U. S., going fast ..... 610
Timken Roller Bearing Co., Casehardening plant. Ehn. ..... 579

TIN:
——(B.P.) ..... 82
——Increase in British exports of ..... 589
——Iron waste, recovery of products from (P.) ..... 735
——Ore deposits ..... 577
Tool steel, flaky fractures in ..... 117
Tractor and trailer transportation. Potts 1061

TRADE NOTES:
——654, 744, 784, 834, 875, 918, 959, 1002, 1047, 1090, 1134

TRADE & INDUSTRY (See Industry & Trade):
——Chemicals and allied products show gains of export ..... 786
Trademark agreement with South America 1001
Traditions, Why not get away from. Comment ..... 148
——Transmission of heat. British report on ..... 321
Treasury Department issues instructions on currency conversion ..... 961
Trent amalgams, a study of ..... 116
Tube mill for niter cake..... 1039
Tungsten. (B.P.) ..... 367
Turpentine substitute. (B.P.) ..... 368
Twelve-hour day, The ..... 84

U

Ultramarine plant started ..... 961
United Engineering Societies' library ... 495
United Kingdom increases imports of coal tar dyes in first quarter of year. 1047

UNITED STATES:
——Chamber of Commerce aids distribution ..... 420
——Chlorine industry in ..... 847
——Civil Service Commission seeks men . 469
——Gypsum Co. doubles earnings..... 520
——Largest buyer of Haitien logwood... 916
——Largest producer and consumer of rosin turpentine ..... 784
——Potters' Association plan convention 516

UNIVERSITY OF ILLINOIS:
——Alumni to gather at New Haven..... 611
——Seeks graduate assistants ..... 562
University of Michigan to have new chemical engineering lab. ..... 914
University of Kentucky ..... 698
University of Wisconsin, colloid studies under Svedberg planned .....35, 608
Upward trend of chemical prices ..... 737
Urea phosphate (P.) ..... 178
Urea, synthetic, German plant to produce 1089
Use of duriron in Yale's Sterling laboratory. Comment ..... 624
Utilization of waste lime rock ..... 909

V

Validity of tungsten filament patents. Gustin ..... 268
Vanillin manufacture, Synthetic ....399, 806
Vapor compression, evaporators, calculation of. Pridgeon ..... 1109
Vapor pressure curve of xylol. Theoretical derivation of. Edwards ..... 157

VARNISH (See also PAINT):
——(P.) ..... 81
——Composition (P.) ..... 907
——Insulating (P.) ..... 648
——Manufacture of, in 1921 ..... 170
——Synthetic gum and cumaron (P.)... 953
——AND PAINT:
—— Industry in 1921 and 1922..... 186
—— Production ..... 724
——And polishes (P.) ..... 605
Vegetable tanning materials. Seymour-Jones ..... 200

VEGETABLE OILS: See MARKET CONDITIONS:
Vertical retort, New type ..... 772
Viscose threads and filaments (P.)..... 823
Vitaminous bread, Research on..... 626
Vitreous enamels, Use of lepidolite in (P.) 556
Vitreosil in acid maunfacture. Tyler... 692
Vulcanizable composition (P.)..... 319

W

Wage scale of federal employees, Executive order may adjust ..... 179
Wainright urges readiness ..... 560
Wall paper manufacture in a model mill 437

WAR:
——Department, editorial comment .... 2
——Gases cure disease ..... 827

WASHINGTON NEWS:
——653, 695, 739, 783, 916, 960, 1001, 1044, 1089, 1132

WASHING:
——Compound (P.) ..... 33
——Counter-current (P.) ..... 32

WASTE:
——Make byproducts pay to eliminate.. 184
——Paper costs $50,000,000 annually... 308

WATER:
——Jersey sand as softener ..... 945

——GAS:
—— Loss of volume and heating value of—under high pressure ..... 554
—— Making, Low-grade oils in ..... 601
—— Sets, Automatic control of (P.) .. 317

WATER (Continued):
——Softening (B.P.) ..... 463
——Power act, To fight Ford in defense of ..... 373
——Power development, paper plant expansion keeps pace with ..... 183
Wax products (B.P.) ..... 368
Weighted Index of Chemical Prices, 423, 471, 519, 565, 613, 40, 89, 137, 185, 231, 279, 327, 375, 655, 743, 788, 832, 876, 920, 962, 1004, 1049, 1093, 1137
Weisenthal, Phillip, arrested on charge of fraud ..... 833
Welding pressure vessels ..... 298
What is an engineer, comment, Seyt ... 576
What is the life of silica gel? ..... 805
What must a corporation do to borrow money from a bank? Wadsworth 758
"Where to buy," useful data on ..... 371

MILTON C. WHITAKER:
——His work. Little ..... 101
——Perkin medalist, 1923 ..... 100
——Biographical sketch ..... 1016
Winslow, Revised bill excludes chemical patents ..... 323
Wire, Drawing iron and steel (P.) ..... 82

WISCONSIN:
——Foundrymen's Association convenes.. 561
——University of, Chemistry-commerce course, editorial ..... 754

WOOD:
——DISTILLATION:
—— Creating a new industry in ..... 540
—— Process, Stafford ..... 441
—— Products in 1921 and 1922 ..... 446
——Pipe in plant construction. Smith.. 677
——Preservative, coatings that prevent end checks in wood and which prevent moisture absorption ...587, 589
——Pulp, Johnson and Lee ..... 257
——Waste, Creating a new industry from 540

——TANKS:
—— Effect of chemical solutions on. Hauser and Bahlman ..... 159
—— For the paper-making industry, Long ..... 677
Wool, Dry cleaning (P.) ..... 995

WORLD:
——Commerce Corporation, Huston resigns to head ..... 560
——Oil situation ..... 729

X

Xylol, vapor pressure of (theoretical derivation of). Edwards ..... 157
X-ray examination of steel castings. Lester 261

Y

YALE:
——Harry A. Curtis to direct chemical engineering at ..... 917
——Iota Sigma Pi of Yale invites women chemists ..... 515
——To do silk research ..... 559
——Sterling chemical laboratory of .... 387

Z

ZINC:
——Condensers ..... 215
——Chloride in wood, Action of water on 724
——Dust and its uses .....644, 874
——Dust industry, Germany's explained.. 1090
——Ores, volatilization of ..... 1025

——OXIDE:
—— Improvement in Wetherell process (P.) ..... 995
—— Production of (P.) ..... 556
—— Pigments, Gains in output of .... 1001
——Rolled, Production of, in 1922 .... 600

# AUTHOR INDEX


ANDERSON, ROBERT J. Contraction and shrinkage during casting ..... 254
Aupperle, James A. Corrosion-resisting irons and steels ..... 681

BADGER, W. L. Vapor compression systems for evaporators .....27, 73
Bahlman, Clarence and Hauser, S. J. Effect of chemical solutions on various woods used in tanks.... 159
Bain, Edgar C. Cored crystals and metallic compounds ..... 65
———The nature of solid solutions.... 21
Barnes, Frederick. Pitch troubles in newsprint mills ..... 505
Bear, Firman E. What is the future of mixed fertilizer ..... 1121
Belaiew, N. T. Secondary structures in steel ..... 537
Bell, C. C. Building receptacles of vulcanized fiber ..... 689
Bierbaum, Christopher H. A study of bearing metals ..... 304
Blough, E. Aluminum for chemical construction ..... 686
Boggess, R. C. Jacketed cast iron kettles. 684
Bowles, Oliver. An untrodden field in lime research ..... 447
Brallier, Paul S. The chlorine industry in the United States ..... 846
Buell, W. C. Heat salvage in small furnaces ..... 639

CALBECK, J. H. Lead pigments: protective materials for the chemical engineering industries ..... 687
Campbell, H. L. Modern methods of making cupalo mixtures ..... 493
Chapman, Walter J. with Curtis, Harry A. Low temperature carbonization of coal ..... 11
Church, S. R. Refined tar for coating cast iron pipe and fittings..... 447
Crane, F. D. Aims and purposes of the American Institute of Chemistry 457
Curme, G. O. and Young, C. O. Ethylene glycol: its uses and properties. 169
Curtis, Harry A. and Chapman, Walter J. Low-temperature carbonization of coal ..... 11
———and Daughton, Earle E. Low temperature carbonization of coal.. 118
———and Geldard, Walter J. Low temperature carbonization of coal..69, 171

DAUGHERTY, WILLIAM T. Developments and tendencies in the German potash industry ..... 205
———Economic status of nitrogen fixation industry in Germany ..... 62
Daughton, Earle E. and Curtis, Harry A. Low temperature carbonization of coal ..... 118
Davis, J. D. Ethylene as a source of alcohol ..... 116
Dewey, Bradley. The future of chemistry in the iron and steel industries.. 1030
Dodd, Harold V. The resolution of petroleum emulsions ..... 249
Dunstan, A. E. with Thole, F. B. Our broadening knowledge of lubrication ..... 299
Duschak, L. H. The chemical engineer's part in the rescue work at the Argonaut mine disaster ..... 349

EDWARDS, DEXTER C. Theoretical derivation of the vapor pressure curve for xylol ..... 157
Edwards, Junius D. Thermal properties of aluminum-silicon alloys ..... 165
Egloff, Gustav and Morrell, Jacque C. Distribution of sulphur in petroleum products ..... 633
Ehn, E. W. Casehardening plant of Timken Roller Bearing Co..... 578
Emley, Warren E. Some problems which Brazilian manufacturers must solve ..... 309
Everett, Roberts. A new idea in trade organization ..... 173

FAHRENWALD, F. A. Metals for high temperature ..... 680

GELDARD, WALTER J. and Curtis, Harry A. Low temperature carbonization of coal ..... 171
Gensecke, Wilhelm. Evaporation by compression ..... 449
Ginsberg, Ismar. The steam accumulator 809
Green, Henry. Microscopy of paint and rubber pigments ..... 53
Greene, J. F. Glass in chemical industry. 689
Greene, O. V. with Pulsifer, H. B. Structure of chromium nickel steel. 354
Gustin, Wellington. Breach of implied warranty ..... 315
———Cancellation provision renders contract covering purchase and sale of iron and steel bars unenforcable ..... 175
———Chemical use of palladium alloy.. 362
———Decision upholding validity of tungsten filament patents brings out points on foreign process patents ..... 268
———Delay in shipping goods ..... 363
———Famous trademark case reversed.. 1076
———Fixing profits of infringing machine ..... 1076
———Goods in bankruptcy ..... 458
———Langmuir patent upheld ..... 314
———Menace of loosely drawn contracts 70
———Novel claim for damages ..... 497
———Officers as dual agents ..... 315
———Perkins glue patent not infringed.. 459
———Perkins patent for process and product covering glue upheld in three cases ..... 124
———Public interest in every adjudication regarding validity of patents emphasized ..... 25
———Sales agreement proves unenforceable ..... 1076
———Schroder roofing patent invalid... 497
———Standard of comparison for determining profit from infringement of alkaline process for reclaiming rubber ..... 124
———Where combination of old elements is patentable ..... 222

HANSEN, IVAR J. MOLTKE-. How can financiers prevent over industrial expansion? ..... 248
Harder, Oscar E. with Priester, George C. Effect of temperature on the mechanical and microscopic properties of steel ..... 111
Harris, John P. What real co-operation can do for the edible oil industry. 545
Hauser, S. J. and Bahlman, Clarence. Effect of chemical solutions on various woods used in tanks.. 159
Hayward, Carle R. Technical education in metallurgy ..... 599
Hendrick, Ellwood. Baking research, incidence of research on ..... 718
Herschel, Winslow H. Testing oiliness by friction-testing machines ...302, 594
Hodson, Frank. A new method for case hardening ..... 308
Holden, Edwin C. Methods of air drying. 801
Holz, Herman A. Elastic column dynamometer for hardness testing.. 289
Hood, O. P. German brown coal compared with American lignite... 58
Huff, Wilbert J. A modern tar distillation 720

JENKIN, C. F. Fatigue in metals..... 811
Jones, F. L. Seymour-. Art and science of leather manufacture, III 200, IV 400
James, J. H. and Zeisenheim, F. C. Engine experiments with oxidized oils.. 543
Johnsen, Bjarne and Lee, H. N. Properties of wood in paper making. 257
Jones, Hilton Ira. Industrial importance of industrial soaps ..... 488
Jorgensen, F. L. Route your materials via air line ..... 932

KIRKPATRICK, SIDNEY D. Chemical engineering in the production of coated fabrics ..... 1017
Knight, Maurice A. Chemical stoneware and its applications ..... 689
Kuhn, H. A. Anti-dimming preparations for glass surfaces ..... 762

LEE, H. N. with Johnsen, Bjarne. Properties of wood in paper making.. 257
Lester, H. H. X ray examination of steel castings ..... 261
Lewis, Warren K. How production affects profits ..... 938
Little, Arthur D. Whitaker and his work. 101
Long, L. E. Wood tanks for the paper making industry ..... 677
Lovell, Stanley P. What chemical technology has done in the shoe manufacturing industry ..... 715

MARSHALL, A. E. Industrial pyrex.. 691
———Pyrex glass as a material for chemical plant construction..... 217
Maxwell, Harold L. Microstructure of paint films ..... 850
McBride, R. S. Coke industry recovered in 1922 despite difficulties .... 163
McKay, R. J. Nickel and monel metal. 686
Milliken, Foster Jr. Aterite ..... 684
Miner, Edward G. Enamel-lined apparatus 687
Morrell, Jacque C. and Egloff, Gustav. Distribution of sulphur in petroleum products ..... 633
Mullaney, F. P. How does idleness affect profits and selling prices? ..... 531

NEGRU, J. S. European conditions as I saw them ..... 220
Nord, F. F. What happens during fermentation? ..... 351

PARKER, W. L. and Selvig, W. A. The determination of the specific gravity of coke ..... 547
Pennucci, Conrad. Important considerations in construction of wood tanks ..... 676
Potts, Matthew William. A problem in barrel storage and how it is solved ..... 404
———How to save money by proper methods of barrel handling .... 345
———How the railless railroad solves the unskilled labor problem ..... 1061
———The dollars and cents of careful barrel handling ..... 493
Price, David J. Preventing dust fires and explosions ..... 902
Pridgeon, L. A. Calculation of vapor compression evaporators ..... 1109
Priester, George C. and Harder, Oscar E. Effect of temperature on the mechanical and microscopic properties of steel ..... 111
Pulsifer, H. B .and Greene, O. V. Structure of chromium-nickel steel.. 354

RAY, ARTHUR B. Manufacture of activated carbon ..... 977
Rhodes, F. H. How do you operate a column still? ..... 500
Richardson, William D. A new instrument for testing glue and gelatine jellies ..... 551
Rimbach, Richard. Research bureau laboratory Standard Steel Car Co. 111

SANDERS, MARSHALL T. Evaluation of decolorizing carbons ..... 541
Schenck, Pierce D. Acid-resisting irons.... 678
Schneider, William G. Use of copper and its alloys in chemical engineering. 682
Scott, Howard. The magnetic change $A_2$ in silicon and chromium steels.... 213
Selvig, W. A. and Parker, W. L. The determination of the specific gravity of coke ..... 547
Smith, Eugene R. Woodpipe in plant construction ..... 677
Smull, J. G., with Subkow P. Pyruvic acid from lactic acid ..... 357
Steffens, John A. When copper should be used in chemical equipment.... 683
Stoughton, Bradley. Current practice in making electric furnace steel.... 983
Subkow, P., with Smull, J. G. Pyruvic acid from lactic acid ..... 357

THOLE, F. B., with Dunstan, A. E. Our broadening knowledge of lubrication ..... 299
Thum, E. E. Large containers ..... 679
Turneaure, F. E. A longer college course for engineers ..... 18
Tyler, S. L. Vitreosil in acid manufacture 692

VAIL, JAMES G. Silicate of soda in the ceramic industries ..... 636
Van Arsdel, Wallace B. An extension of the theory of gas absorption towers ..... 889
Van Nuys, C. C. Conditions for perfect rectification of binary mixtures.... 206
———Conditions for reversible rectification ..... 408
———Effect on rectification of liquid feed at intermediate level..... 311
———Methods of operating which affect limiting composition of binary liquids ..... 359
———What happens at the lower end of the rectifying column ..... 255
Viol, Charles H. Fused silica in radium production ..... 692

WADSWORTH, CHARLES. The commercial banker's function in business ..... 487
———What must a corporation do to borrow money from a bank?..... 758
Warmung, Kai. Machinery for bagging superphosphate ..... 893
Weaver, E. R. Production of hydrogen by thermal decomposition of oil... 765, 939, 1072
Whittaker, Harold F. Notes on brasses and bronzes ..... 685
Whitaker, Milton C. Organization the keynote of successful chemical production ..... 104
Wikoff, Alan G. A glimpse of the liquid carbon dioxide industry ..... 5
———Manufacture and application of lightweight concrete slabs .... 975
———Manufacture of spark plug porcelain ..... 150
———Some research of general interest in progress at the Mellon Institute. 625
Wolf, Albert G. Is the sulphur market stable? ..... 1031
Wood, Burton G. Production of synthetic vanillin by ozone process....399, 806
Wood, W. P. Corrosion of rust proofed iron and steel ..... 769

YOUNG, J. H. How "asbestos protected metal" was developed commercially 244
Young, C. O. with Curme, G. O., Jr. Ethylene glycol; its uses and properties ..... 169

ZEISBERG, F. C. Glass rings—a new filling for towers ..... 9
Zeisenheim, F. C. and James, J. H. Engine experiments with oxidized oils ..... 543